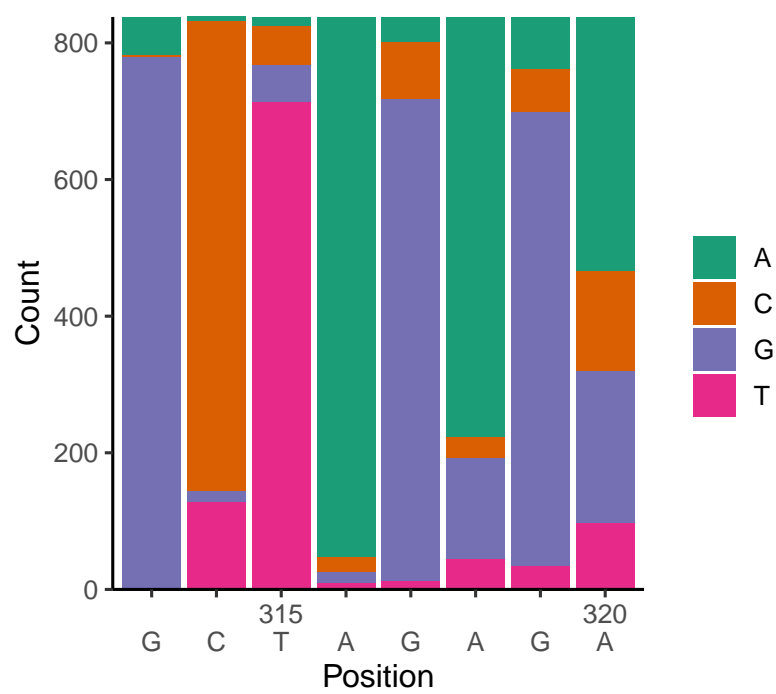
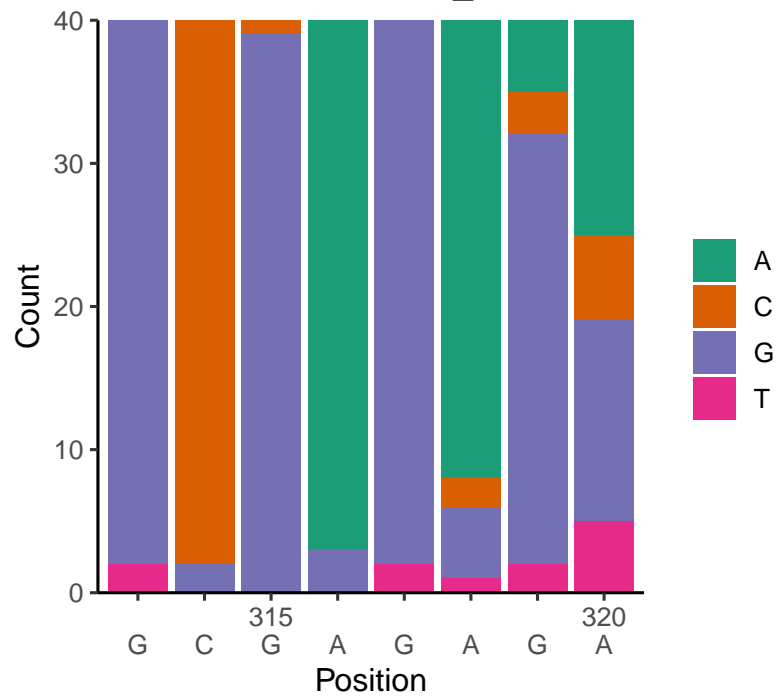


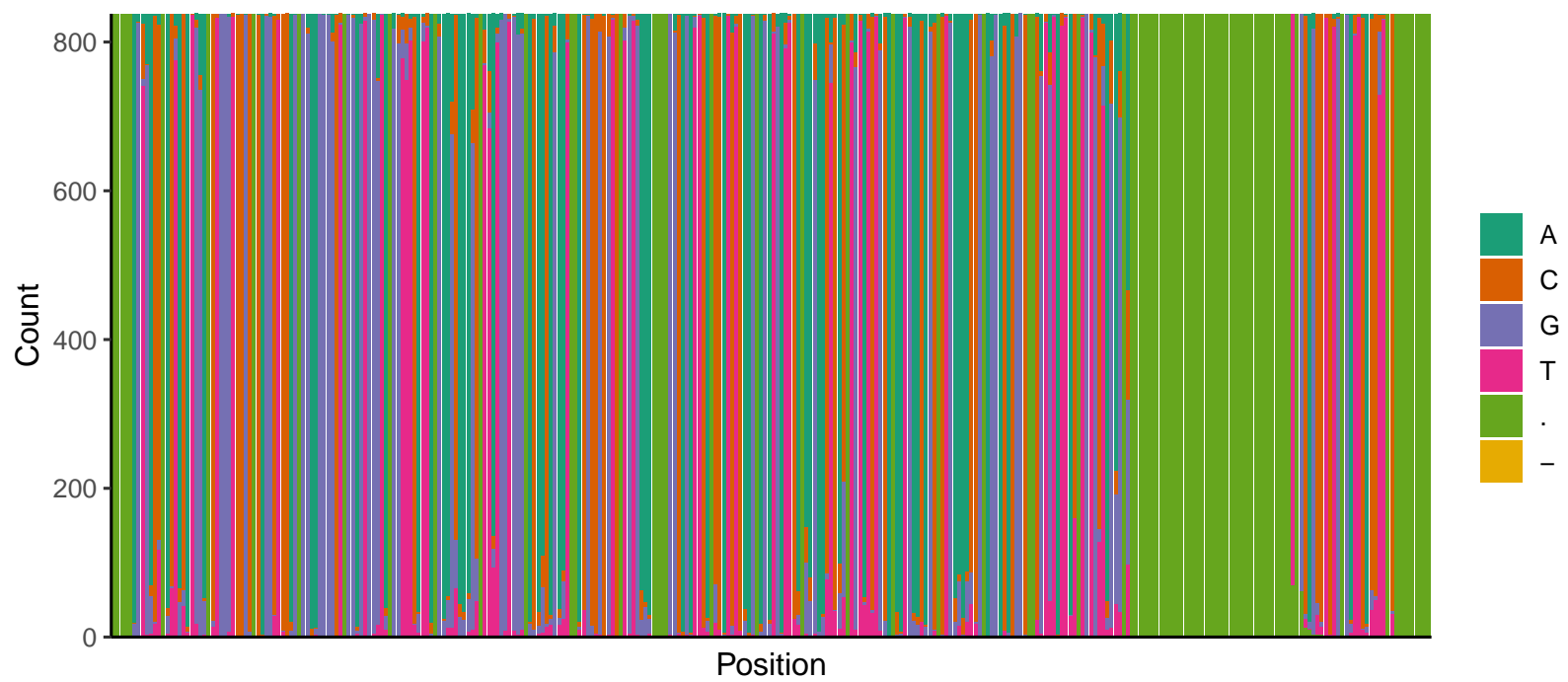
Gene IGHV3-72*01_T159A_C162T_C163T_G164T_T165C_C167T_A173G_A181T_C183



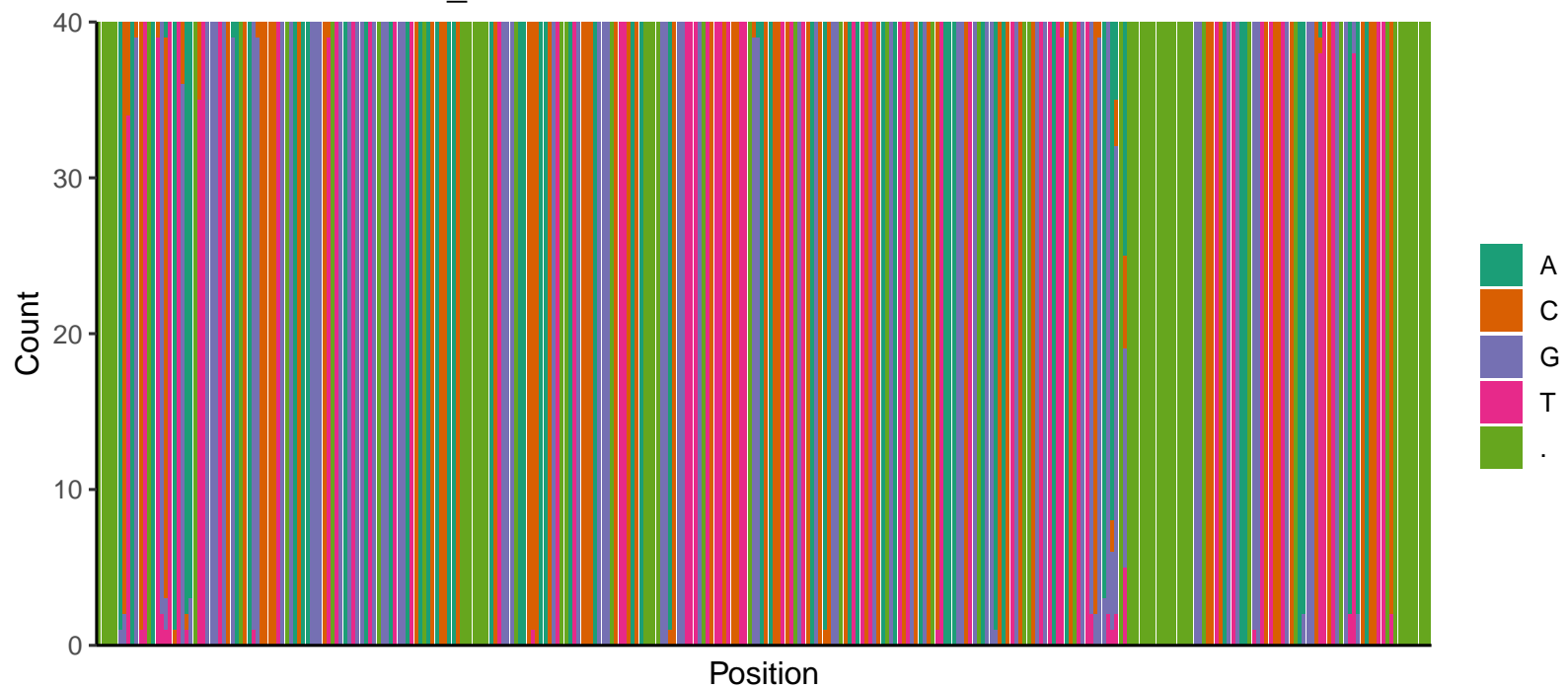
Gene IGHV7-4-1*01_T63C



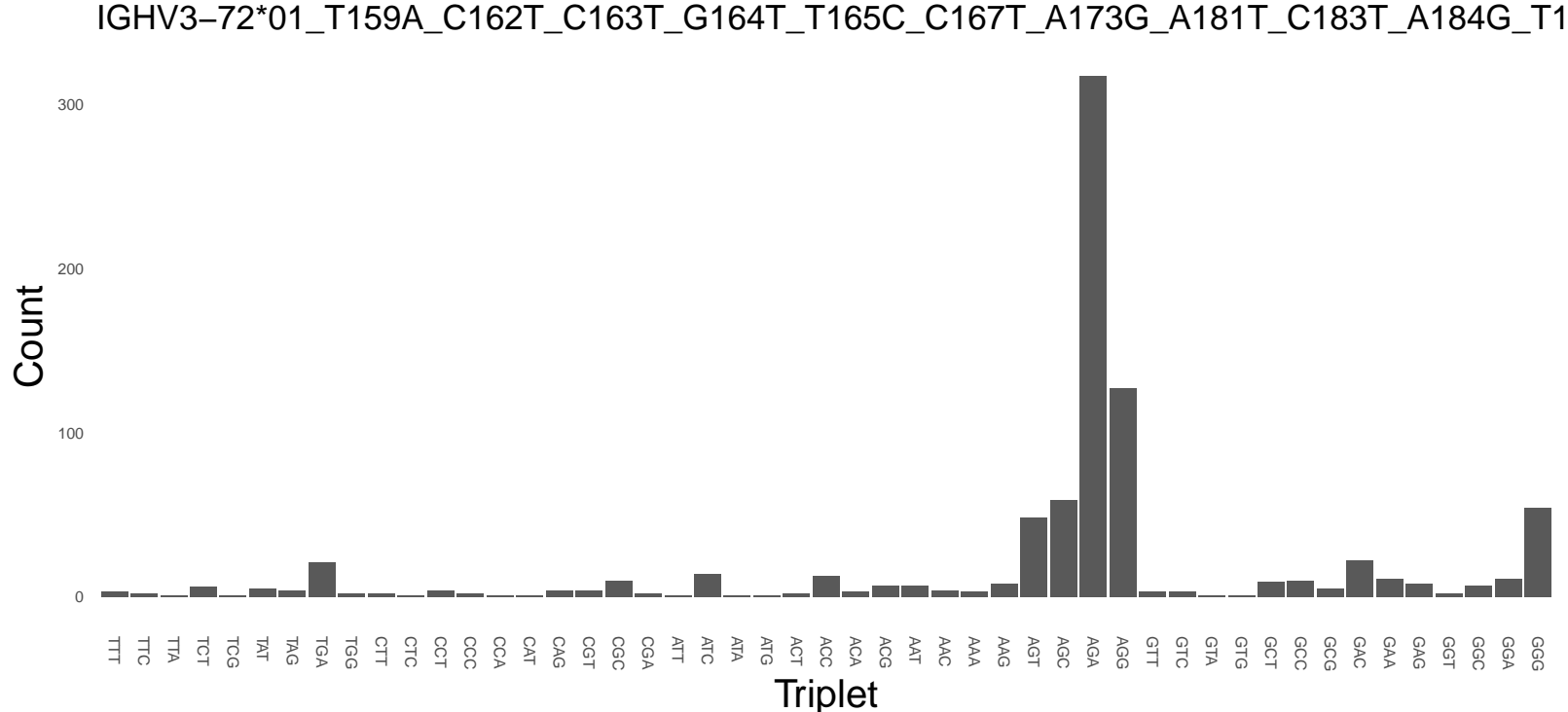
Gene IGHV3-72*01_T159A_C162T_C163T_G164T_T165C_C167T_A173G_A181T_C183



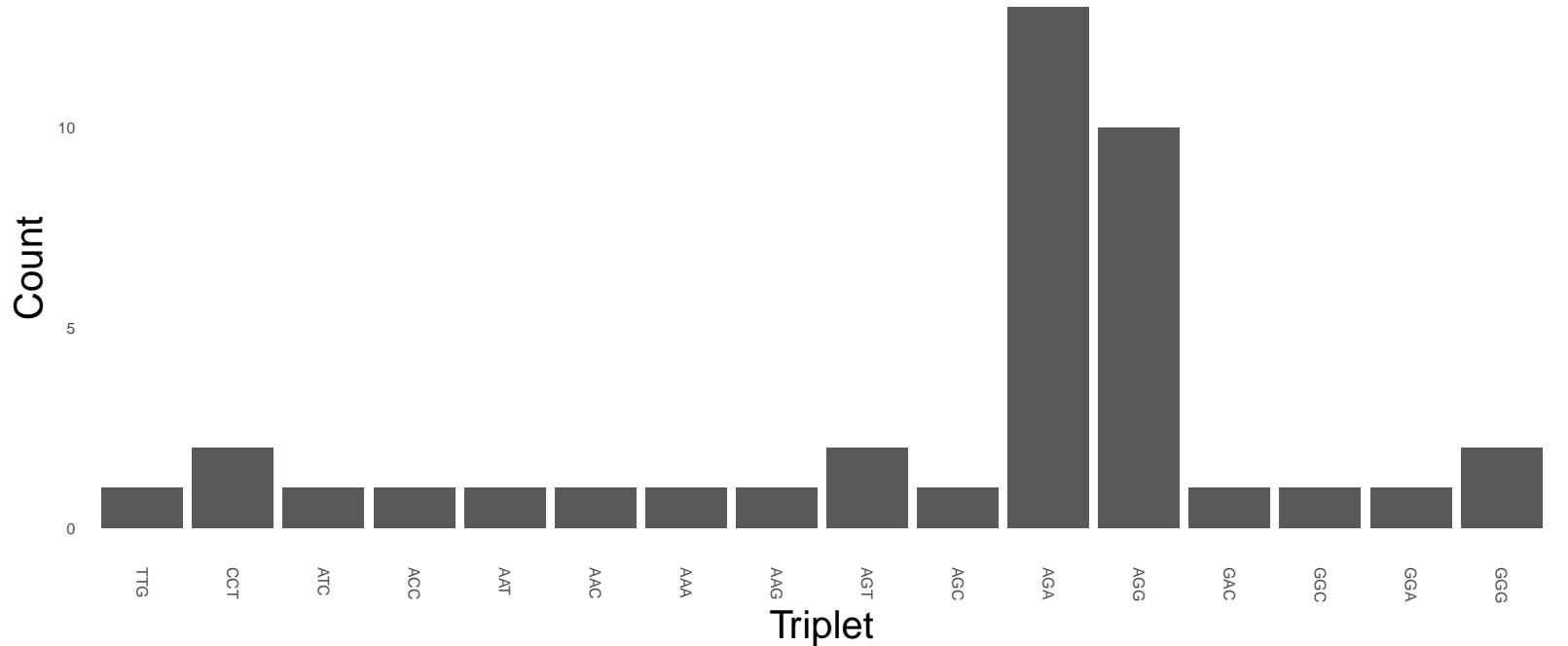
Gene IGHV7-4-1*01_T63C



IGHV3-72*01_T159A_C162T_C163T_G164T_T165C_C167T_A173G_A181T_C183T_A184G_T1

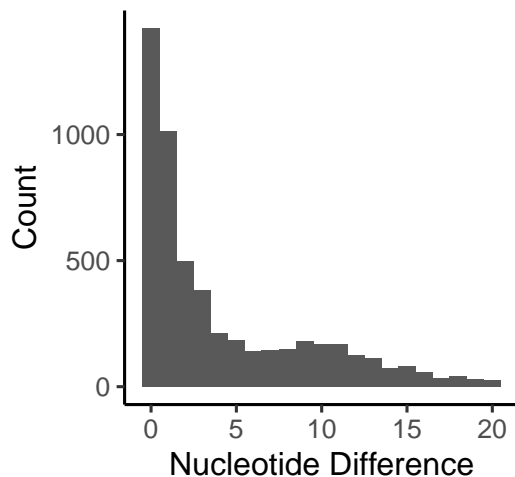


IGHV7-4-1*01_T63C- Final 3 nucleotides as a triplet



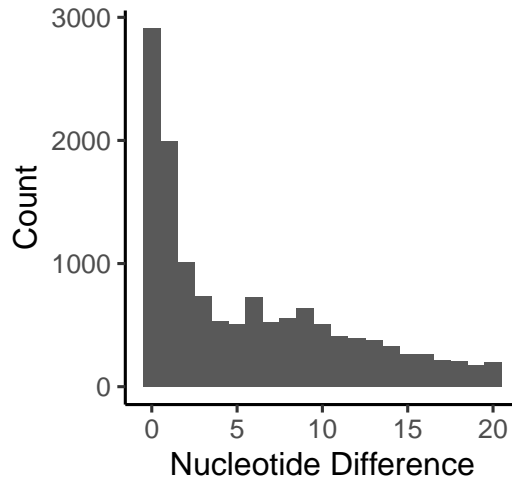
IGHV1-2*04

5440 sequences assigned
1421 (26.1%) exact matches, in which:
1328 unique CDR3
6 unique J



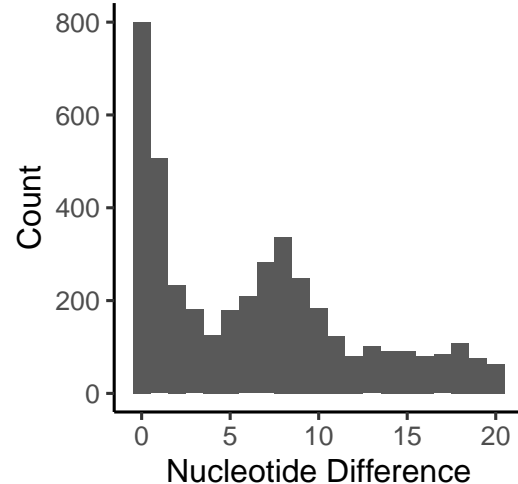
IGHV1-18*01

14419 sequences assigned
2910 (20.2%) exact matches, in which:
2703 unique CDR3
6 unique J



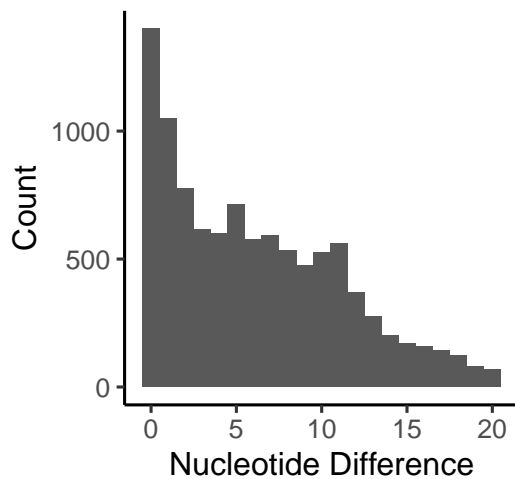
IGHV1-46*01

4651 sequences assigned
801 (17.2%) exact matches, in which:
760 unique CDR3
6 unique J



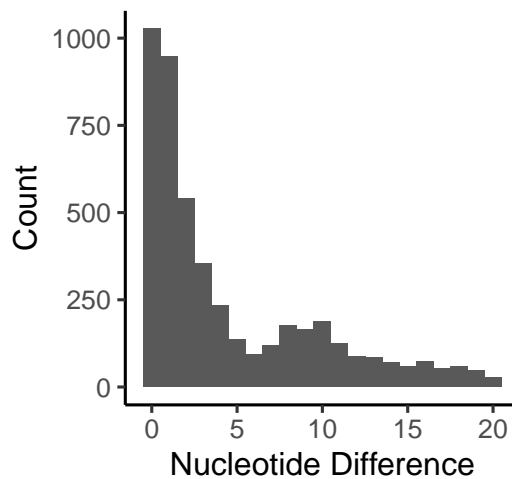
IGHV1-3*01_05

10643 sequences assigned
1400 (13.2%) exact matches, in which:
1285 unique CDR3
6 unique J



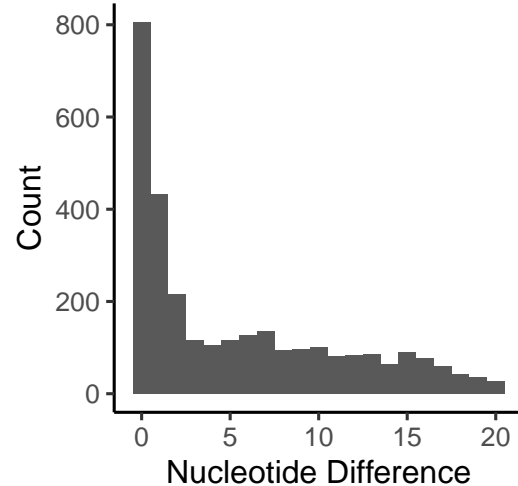
IGHV1-24*01

4773 sequences assigned
1027 (21.5%) exact matches, in which:
950 unique CDR3
6 unique J



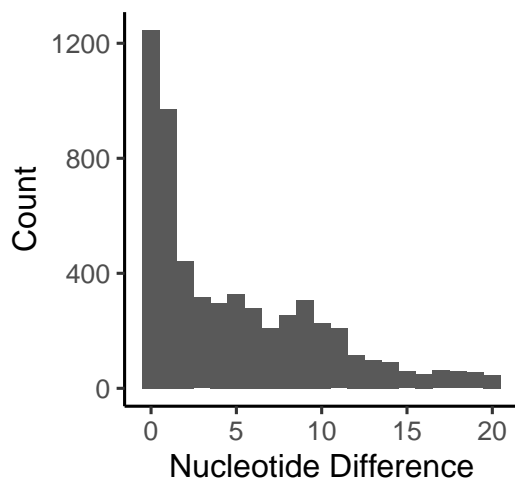
IGHV1-46*04

3250 sequences assigned
806 (24.8%) exact matches, in which:
766 unique CDR3
6 unique J



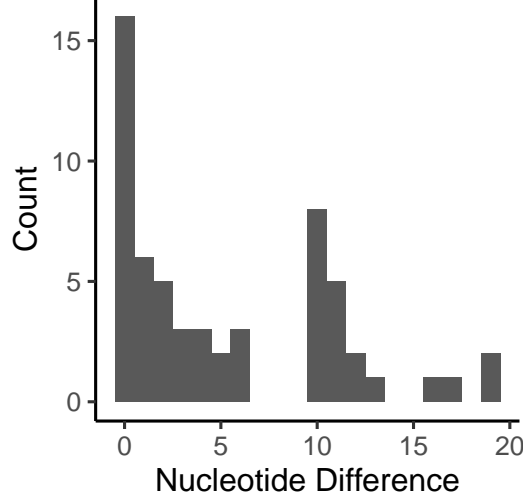
IGHV1-8*01

5990 sequences assigned
1246 (20.8%) exact matches, in which:
1141 unique CDR3
6 unique J



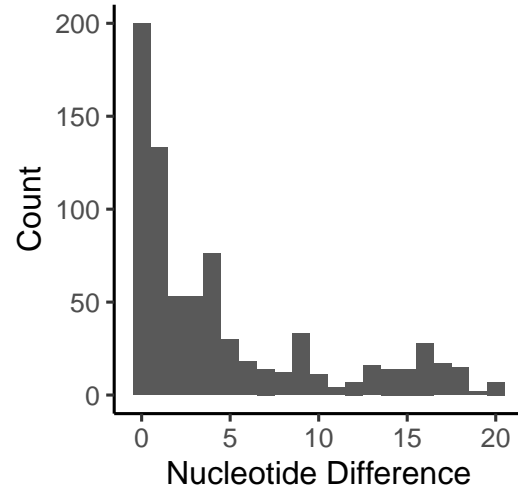
IGHV1-45*02

58 sequences assigned
16 (27.6%) exact matches, in which:
14 unique CDR3
4 unique J



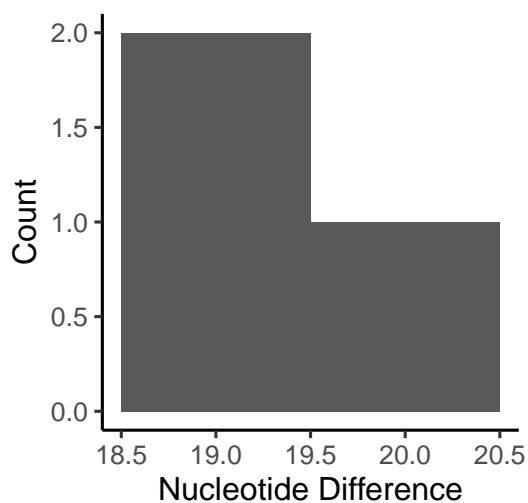
IGHV1-58*02

808 sequences assigned
200 (24.8%) exact matches, in which:
189 unique CDR3
6 unique J



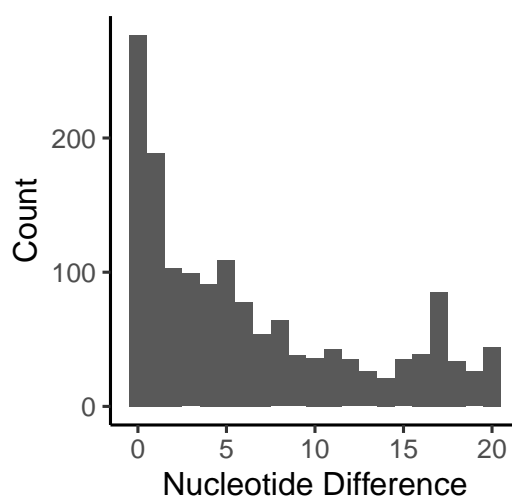
IGHV1-69-2*01

3 sequences assigned
No exact matches.



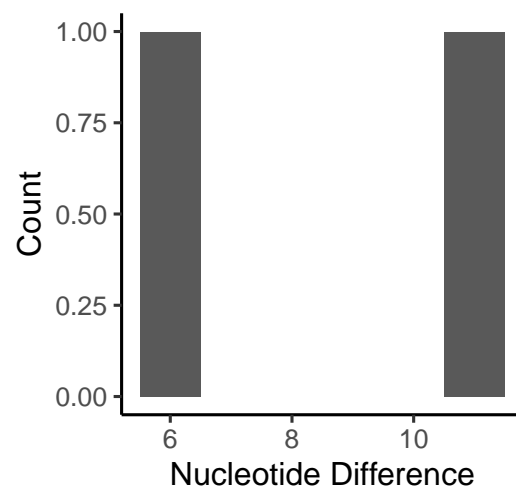
IGHV2-5*02

1692 sequences assigned
277 (16.4%) exact matches, in which:
255 unique CDR3
6 unique J



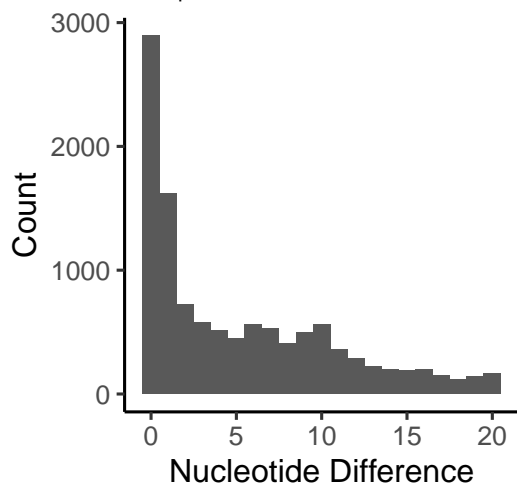
IGHV2-70D*04

3 sequences assigned
No exact matches.



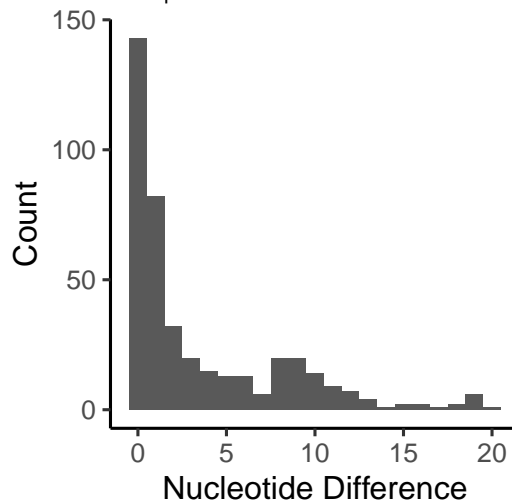
IGHV1-69*04_09

12341 sequences assigned
2894 (23.5%) exact matches, in which:
2771 unique CDR3
6 unique J



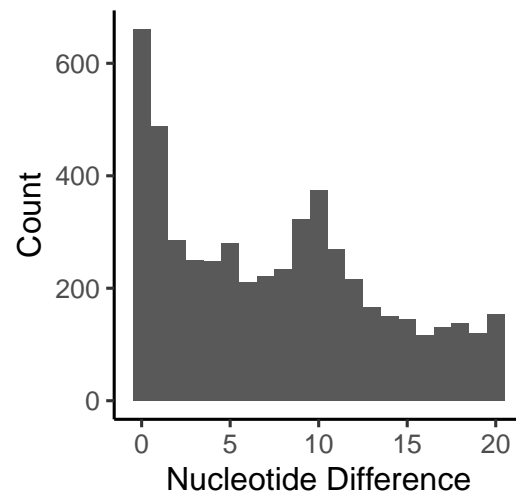
IGHV2-26*01

440 sequences assigned
143 (32.5%) exact matches, in which:
134 unique CDR3
6 unique J



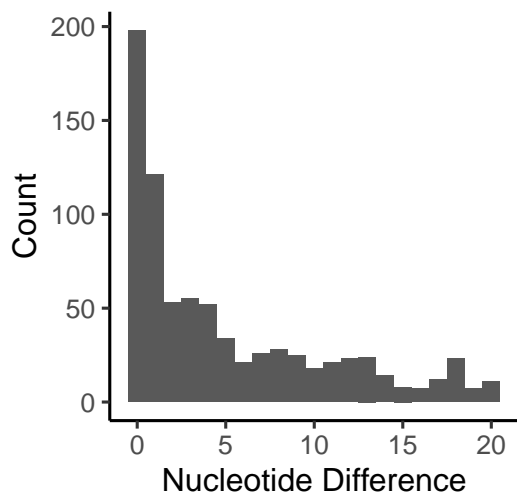
IGHV3-7*01

5658 sequences assigned
661 (11.7%) exact matches, in which:
614 unique CDR3
6 unique J



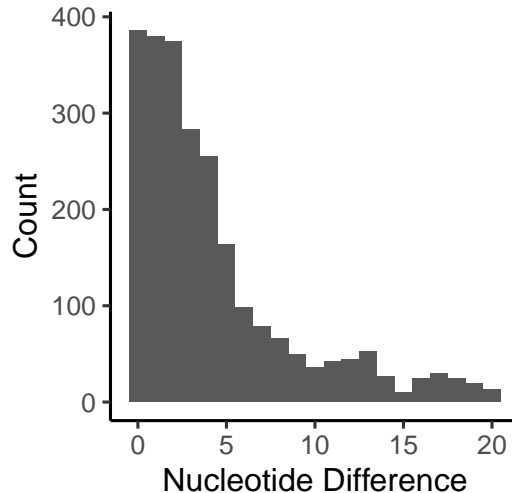
IGHV2-5*01

818 sequences assigned
198 (24.2%) exact matches, in which:
195 unique CDR3
6 unique J



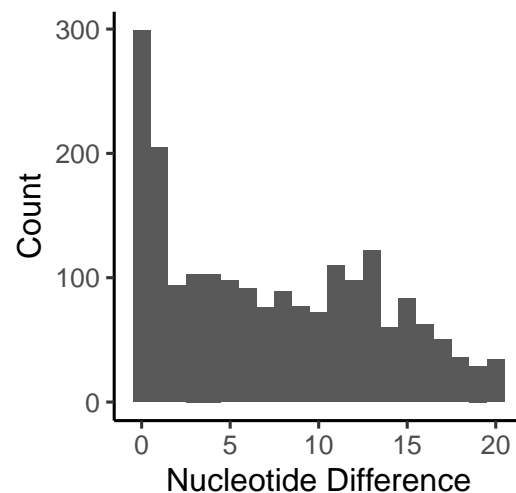
IGHV2-70*11_15

2546 sequences assigned
386 (15.2%) exact matches, in which:
361 unique CDR3
6 unique J



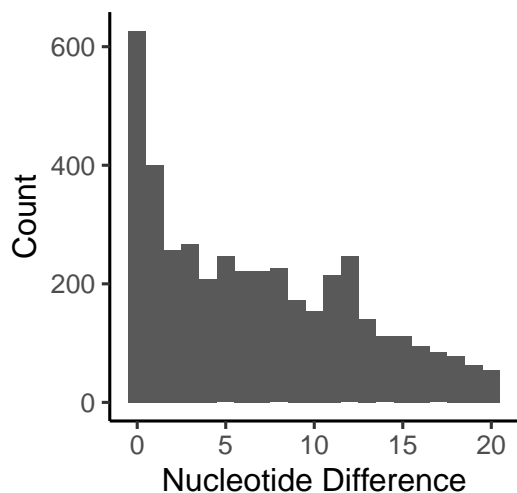
IGHV3-7*04

2188 sequences assigned
299 (13.7%) exact matches, in which:
284 unique CDR3
6 unique J



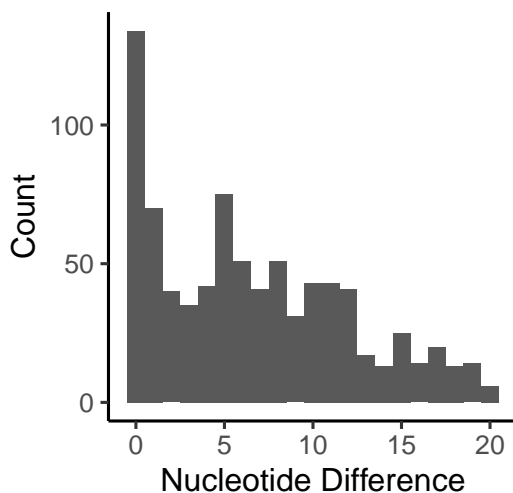
IGHV3-9*01

4524 sequences assigned
627 (13.9%) exact matches, in which:
588 unique CDR3
6 unique J



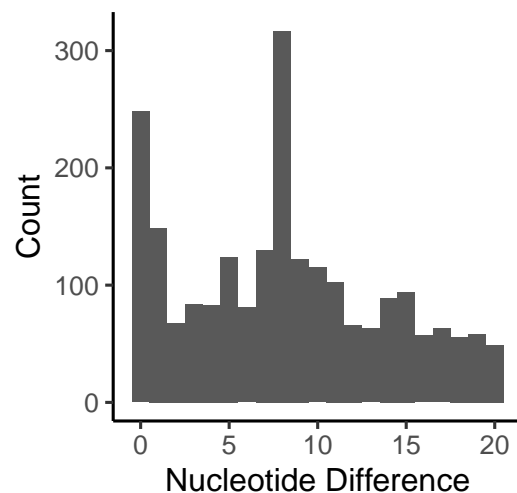
IGHV3-11*06

892 sequences assigned
134 (15%) exact matches, in which:
127 unique CDR3
6 unique J



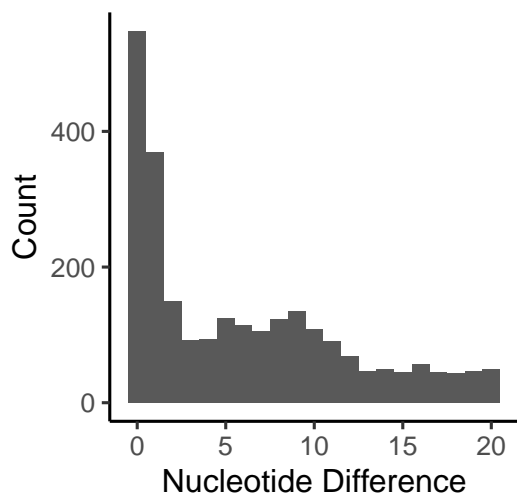
IGHV3-15*01_02

2731 sequences assigned
248 (9.1%) exact matches, in which:
242 unique CDR3
6 unique J



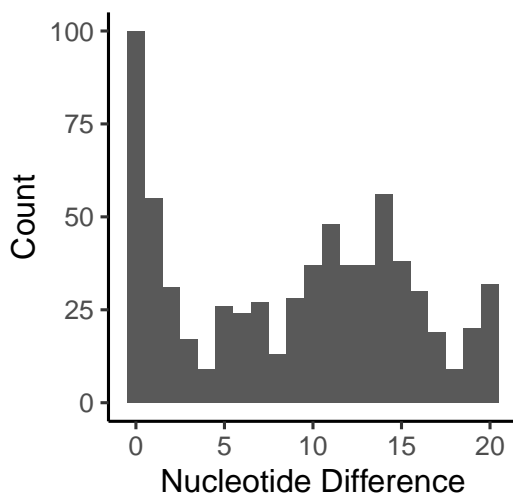
IGHV3-11*01

2857 sequences assigned
548 (19.2%) exact matches, in which:
519 unique CDR3
6 unique J



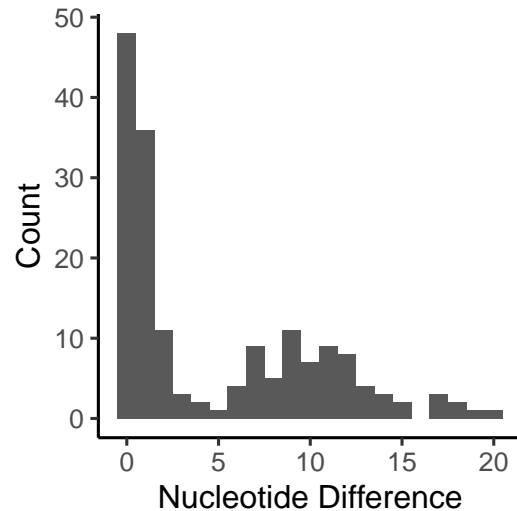
IGHV3-13*01

843 sequences assigned
100 (11.9%) exact matches, in which:
94 unique CDR3
5 unique J



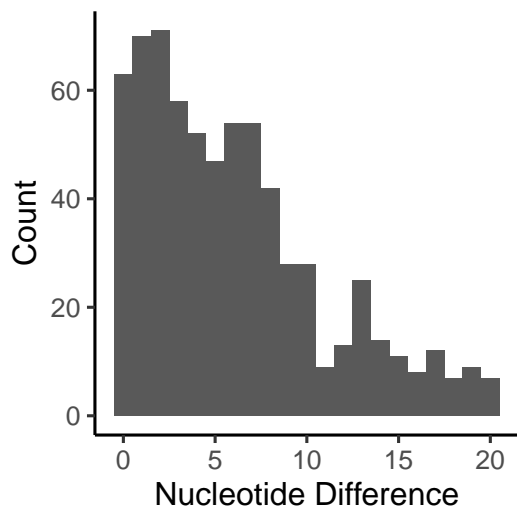
IGHV3-20*01_02

171 sequences assigned
48 (28.1%) exact matches, in which:
47 unique CDR3
5 unique J



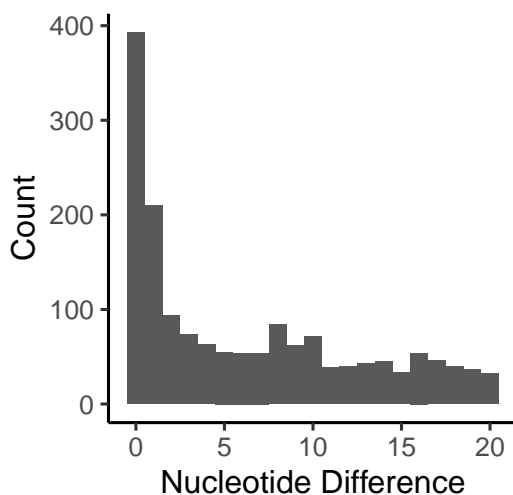
IGHV3-11*04

709 sequences assigned
63 (8.9%) exact matches, in which:
63 unique CDR3
6 unique J



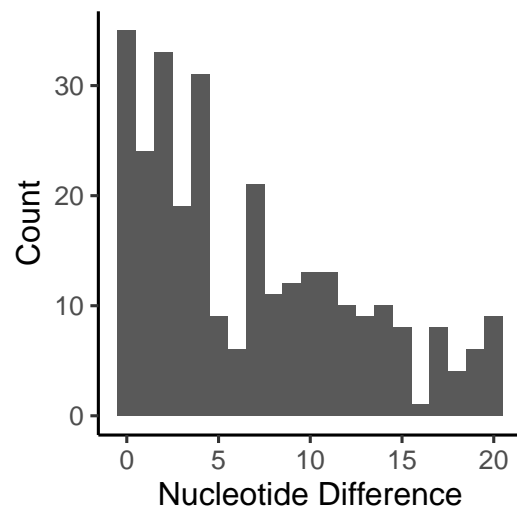
IGHV3-15*07

1813 sequences assigned
393 (21.7%) exact matches, in which:
377 unique CDR3
6 unique J



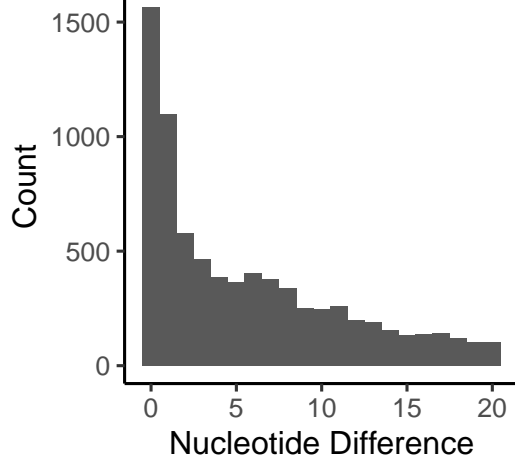
IGHV3-20*03_04

366 sequences assigned
35 (9.6%) exact matches, in which:
32 unique CDR3
3 unique J



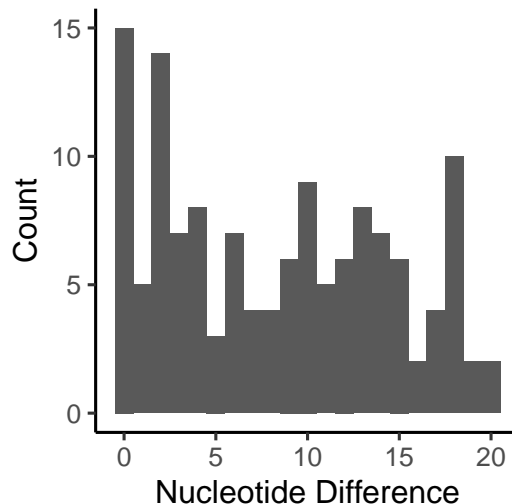
IGHV3-21*01_02

8846 sequences assigned
1564 (17.7%) exact matches, in which:
1462 unique CDR3
6 unique J



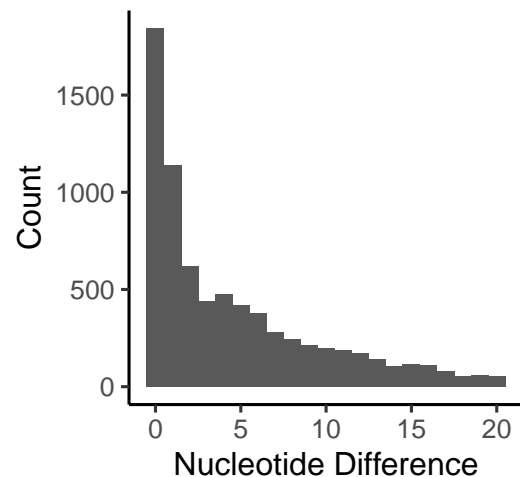
IGHV3-30-5*01

142 sequences assigned
15 (10.6%) exact matches, in which:
15 unique CDR3
3 unique J



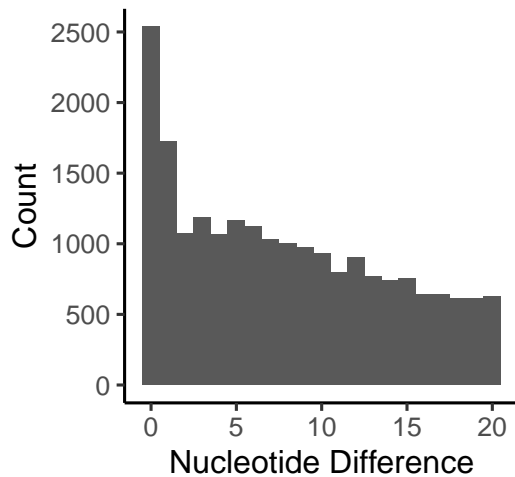
IGHV3-33*01

7852 sequences assigned
1843 (23.5%) exact matches, in which:
1755 unique CDR3
6 unique J



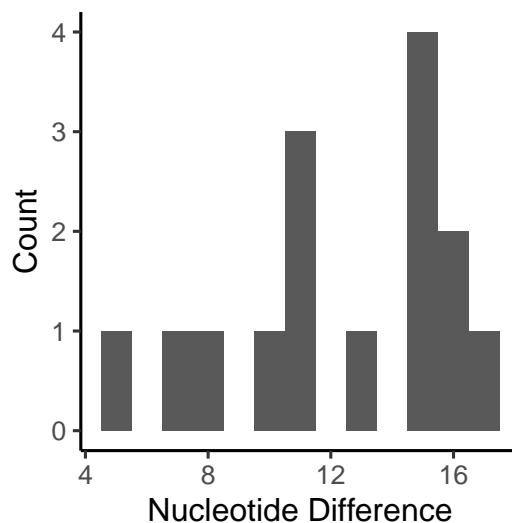
IGHV3-23*01_04

24305 sequences assigned
2537 (10.4%) exact matches, in which:
2397 unique CDR3
6 unique J



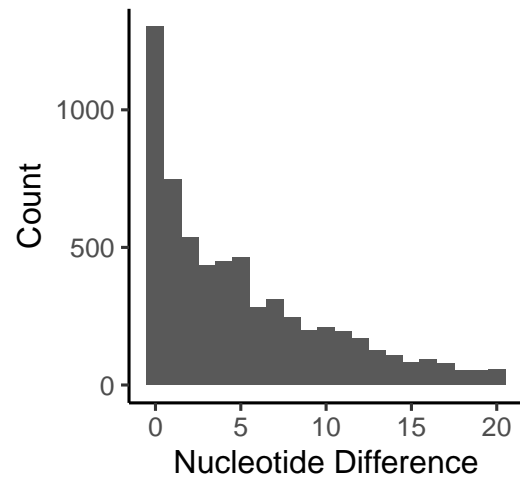
IGHV3-30-5*02

23 sequences assigned
No exact matches.



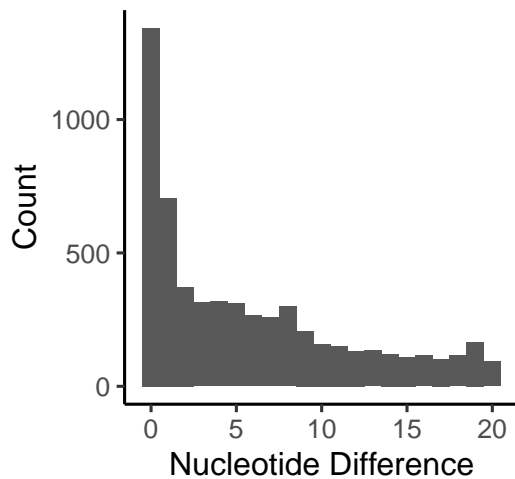
IGHV3-33*08

6511 sequences assigned
1302 (20%) exact matches, in which:
1251 unique CDR3
6 unique J



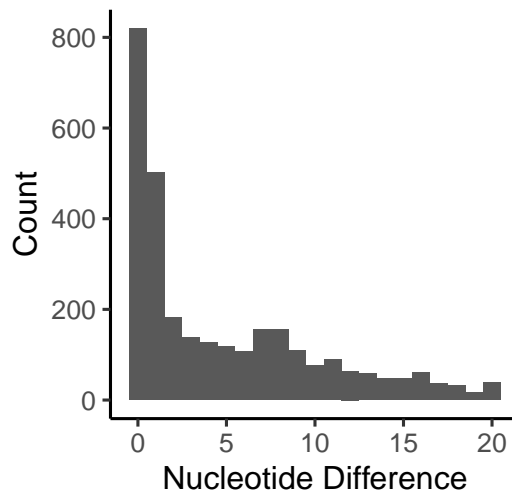
IGHV3-30-3*01

6462 sequences assigned
1343 (20.8%) exact matches, in which:
1287 unique CDR3
6 unique J



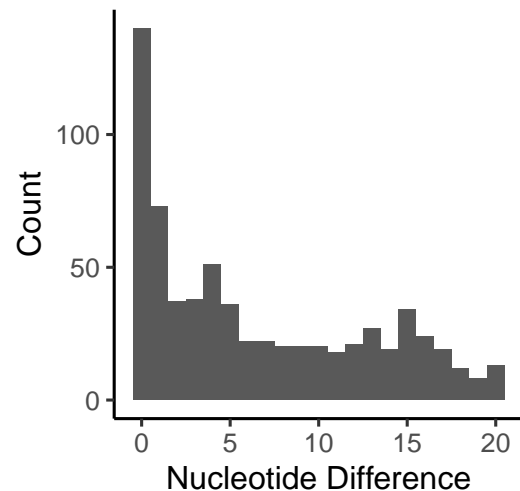
IGHV3-30*03

3178 sequences assigned
820 (25.8%) exact matches, in which:
761 unique CDR3
6 unique J



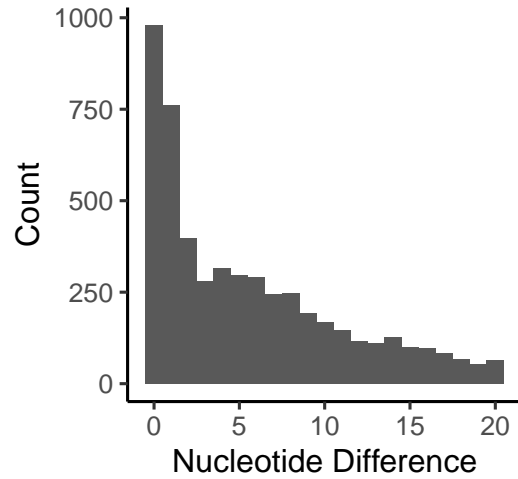
IGHV3-43*01

801 sequences assigned
140 (17.5%) exact matches, in which:
135 unique CDR3
6 unique J



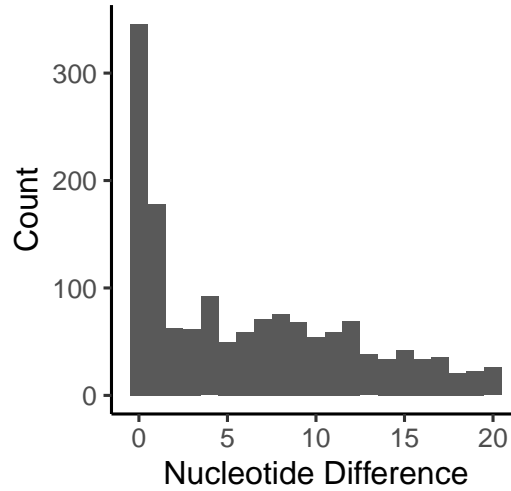
IGHV3-48*01

5422 sequences assigned
979 (18.1%) exact matches, in which:
890 unique CDR3
6 unique J



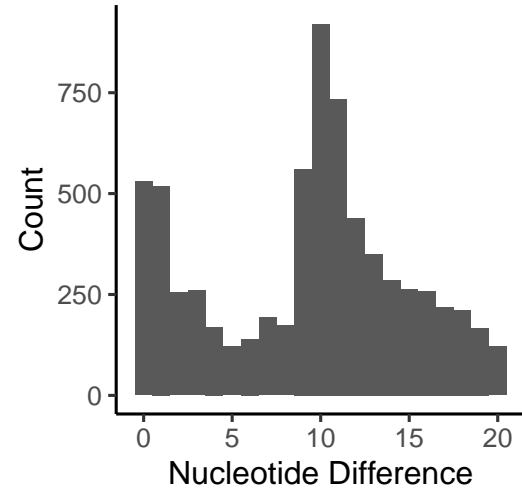
IGHV3-49*03_05

1717 sequences assigned
346 (20.2%) exact matches, in which:
326 unique CDR3
6 unique J



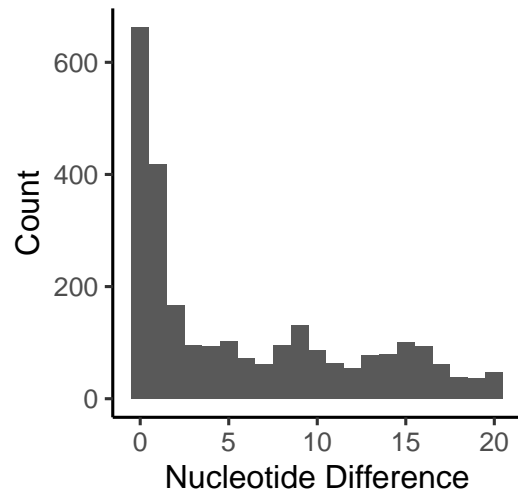
IGHV3-53*01_02

7771 sequences assigned
530 (6.8%) exact matches, in which:
479 unique CDR3
6 unique J



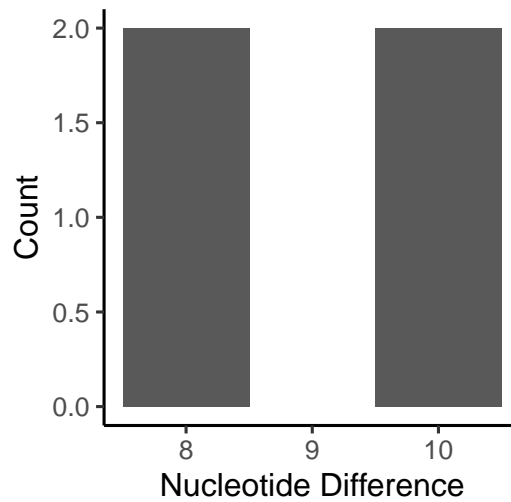
IGHV3-48*02

3003 sequences assigned
663 (22.1%) exact matches, in which:
608 unique CDR3
6 unique J



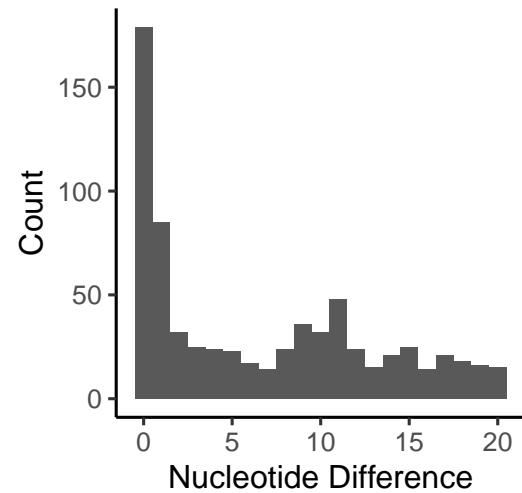
IGHV3-52*01_03

4 sequences assigned
No exact matches.



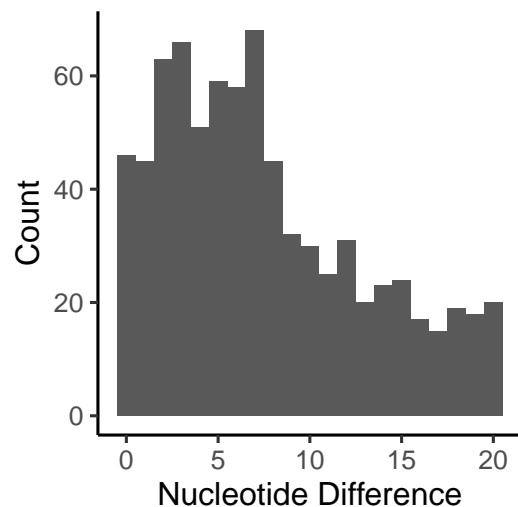
IGHV3-64*01

766 sequences assigned
179 (23.4%) exact matches, in which:
166 unique CDR3
6 unique J



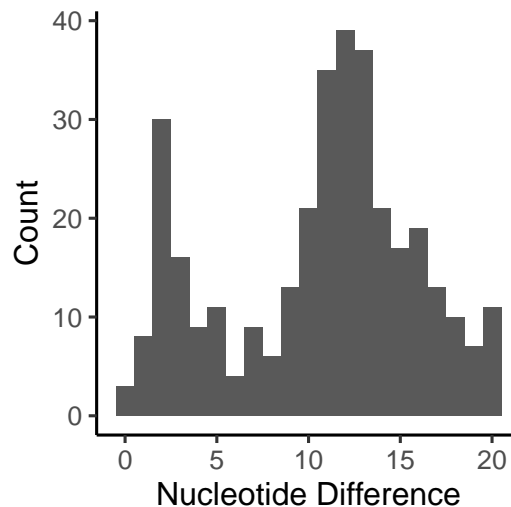
IGHV3-48*04

856 sequences assigned
46 (5.4%) exact matches, in which:
46 unique CDR3
6 unique J



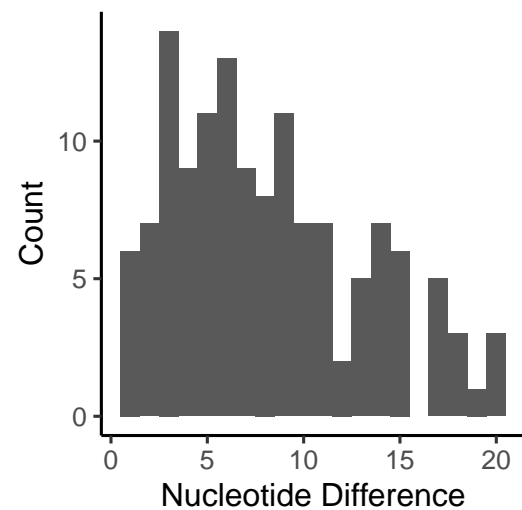
IGHV3-53*05

378 sequences assigned
3 (0.8%) exact matches, in which:
3 unique CDR3
2 unique J



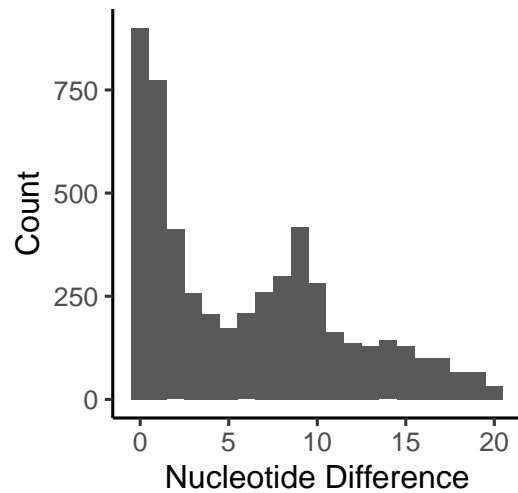
IGHV3-64*04

143 sequences assigned
No exact matches.



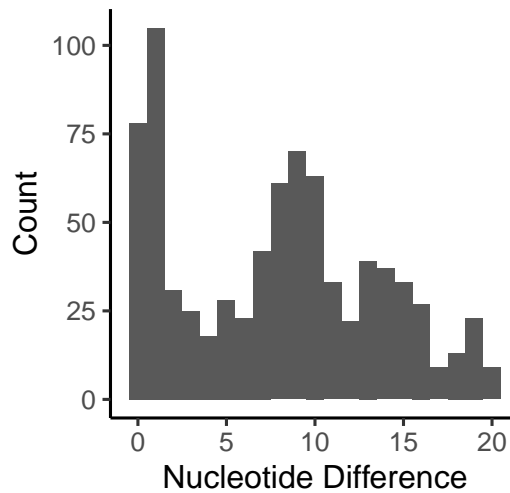
IGHV3–66*01

5649 sequences assigned
901 (15.9%) exact matches, in which:
848 unique CDR3
6 unique J



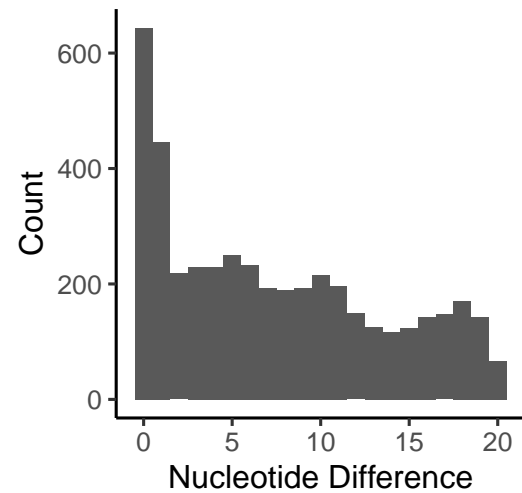
IGHV3–72*01_T159A_C1

838 sequences assigned
78 (9.3%) exact matches, in which:
68 unique CDR3
5 unique J



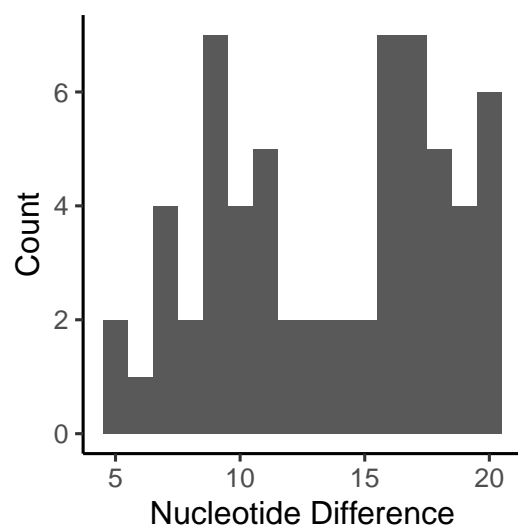
IGHV3–74*01_02

4782 sequences assigned
644 (13.5%) exact matches, in which:
598 unique CDR3
6 unique J



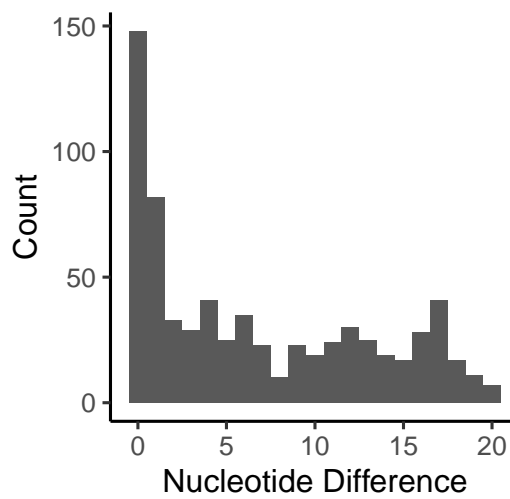
IGHV3–69–1*01

82 sequences assigned
No exact matches.



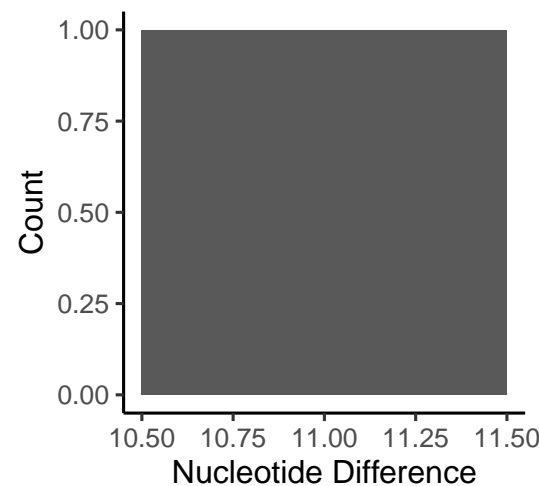
IGHV3–73*01_02

764 sequences assigned
148 (19.4%) exact matches, in which:
140 unique CDR3
6 unique J



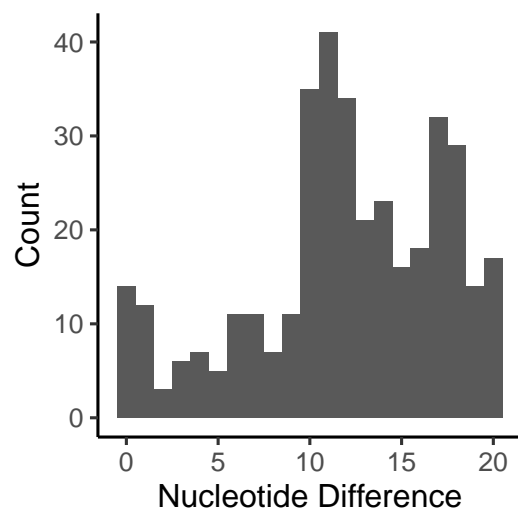
IGHV3–43D*04

4 sequences assigned
No exact matches.



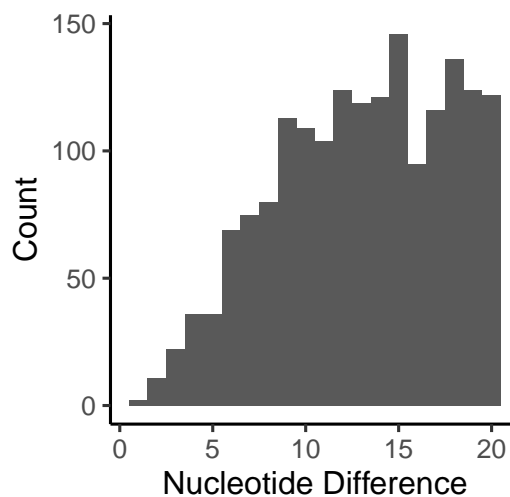
IGHV3–72*01

485 sequences assigned
14 (2.9%) exact matches, in which:
14 unique CDR3
2 unique J



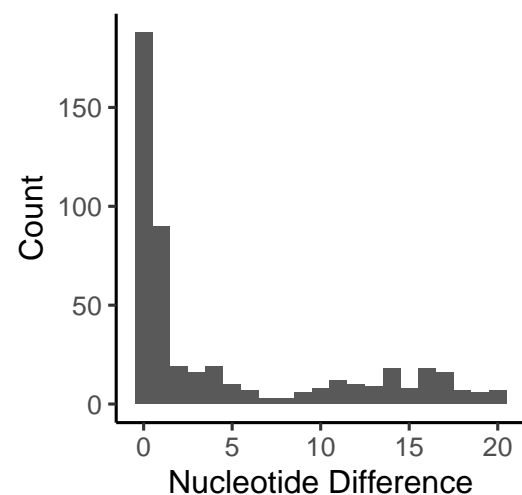
IGHV3–74*03

2253 sequences assigned
No exact matches.



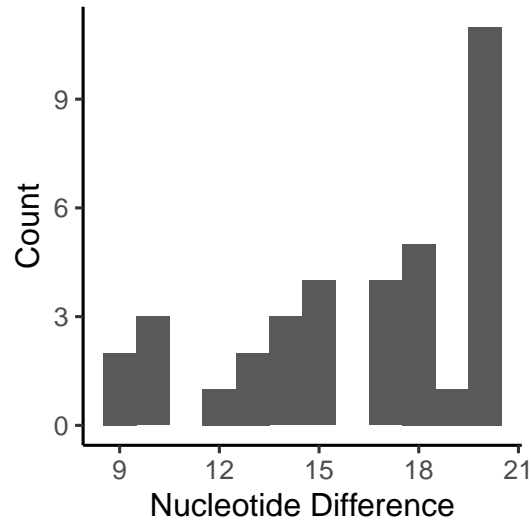
IGHV3–64D*06

512 sequences assigned
188 (36.7%) exact matches, in which:
167 unique CDR3
6 unique J



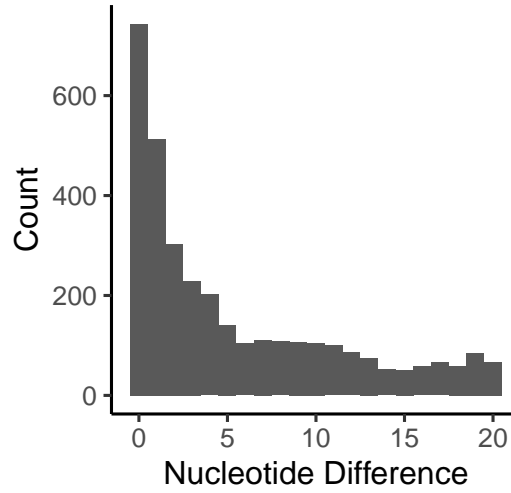
IGHV3-64D*08

73 sequences assigned
No exact matches.



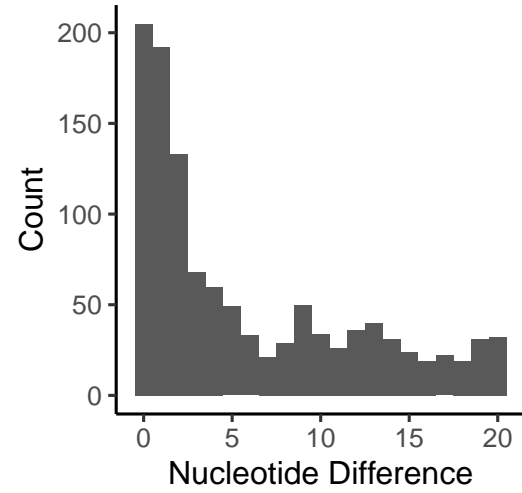
IGHV4-4*02_03

3803 sequences assigned
744 (19.6%) exact matches, in which:
689 unique CDR3
6 unique J



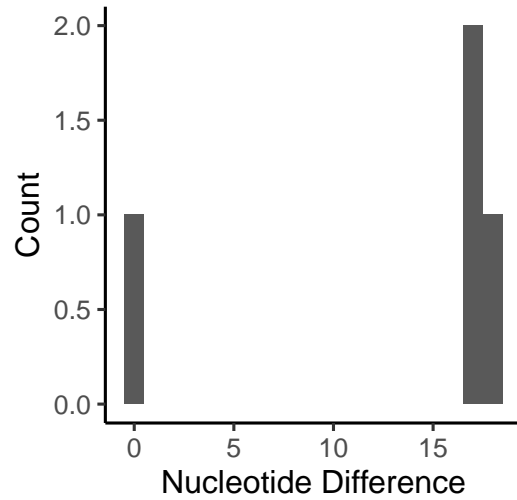
IGHV4-30-2*01

1308 sequences assigned
205 (15.7%) exact matches, in which:
176 unique CDR3
6 unique J



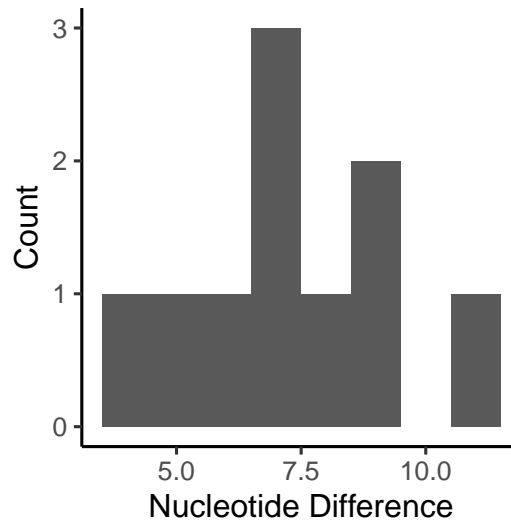
IGHV3-64D*09

4 sequences assigned
1 (25%) exact matches, in which:
1 unique CDR3
1 unique J



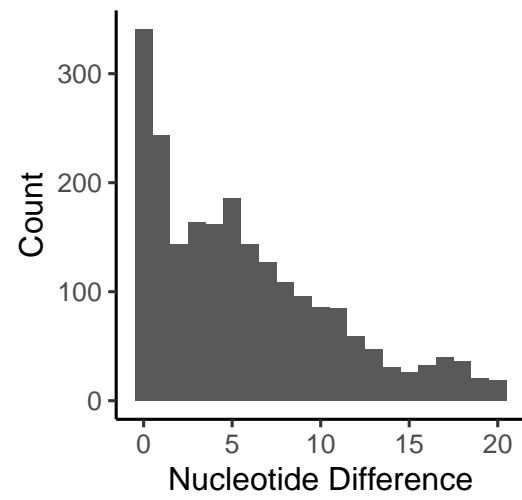
IGHV4-28*03

10 sequences assigned
No exact matches.



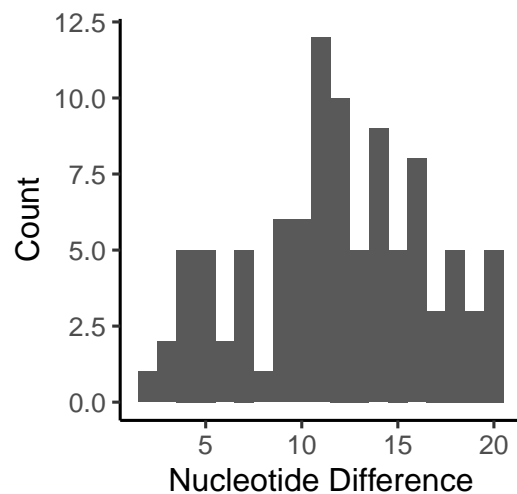
IGHV4-30-4*01

2367 sequences assigned
341 (14.4%) exact matches, in which:
328 unique CDR3
6 unique J



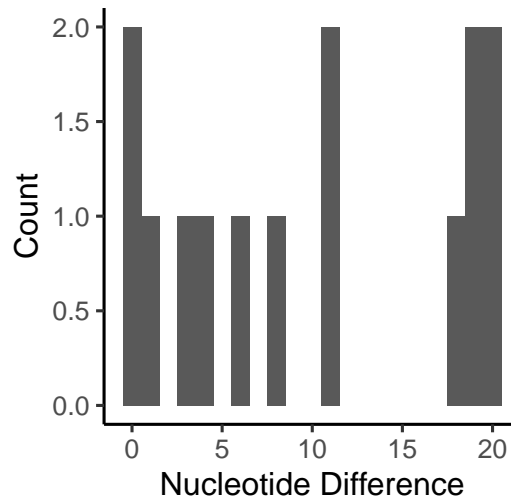
IGHV3-NL1*01

110 sequences assigned
No exact matches.



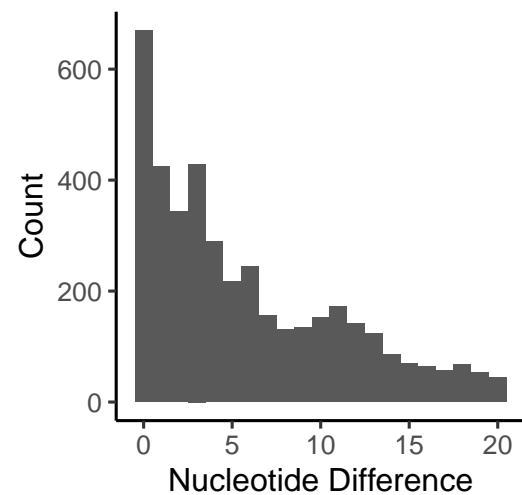
IGHV4-28*01_07

21 sequences assigned
2 (9.5%) exact matches, in which:
2 unique CDR3
2 unique J



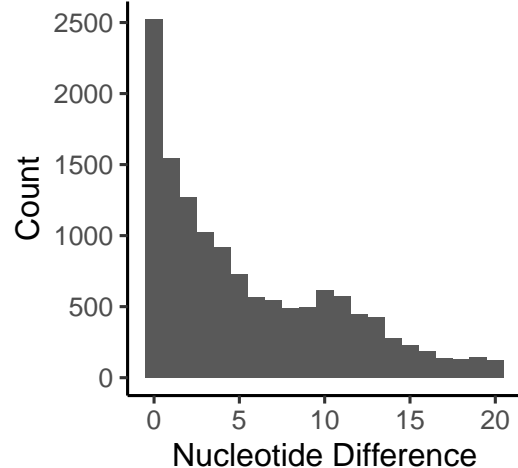
IGHV4-31*02

4338 sequences assigned
670 (15.4%) exact matches, in which:
635 unique CDR3
6 unique J



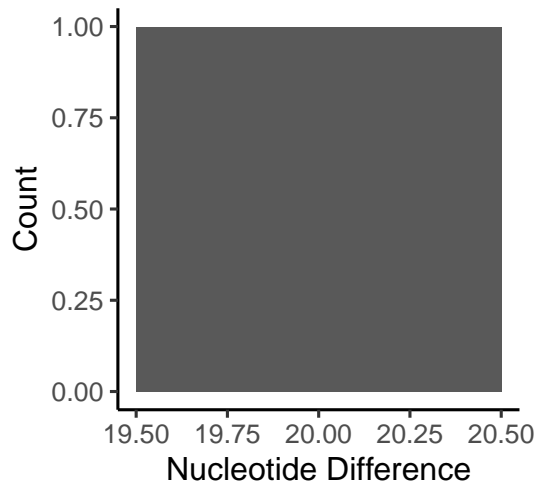
IGHV4-34*01_02

14168 sequences assigned
2522 (17.8%) exact matches, in which:
2353 unique CDR3
6 unique J



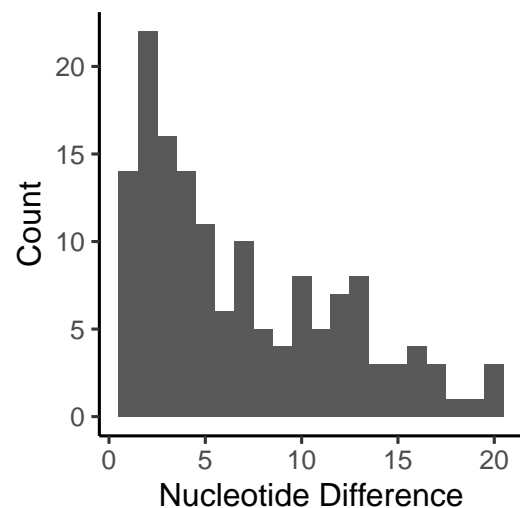
IGHV4-55*09

1 sequences assigned
No exact matches.



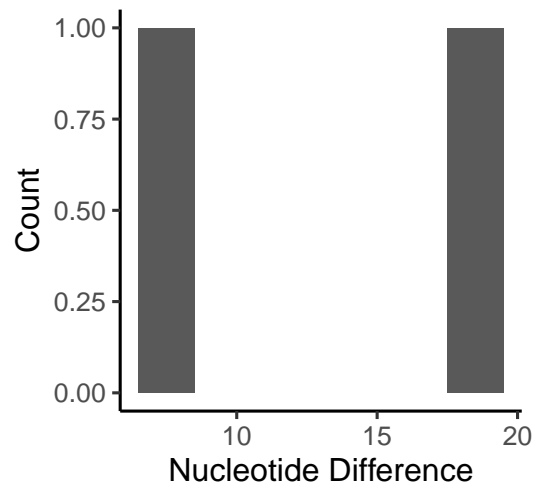
IGHV4-61*08

168 sequences assigned
No exact matches.



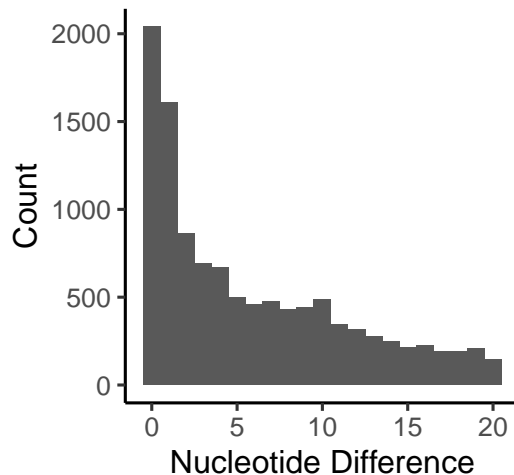
IGHV4-38-2*01

7 sequences assigned
No exact matches.



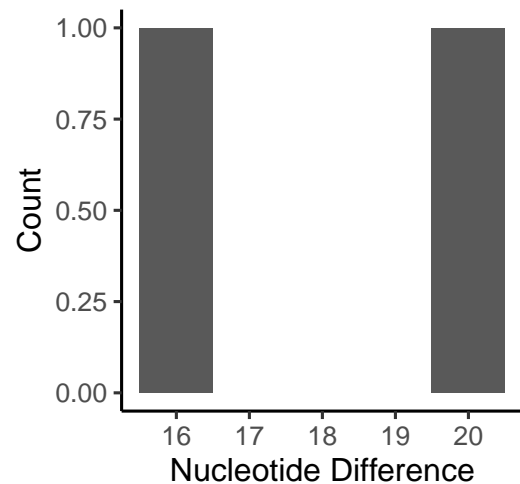
IGHV4-59*08

12339 sequences assigned
2040 (16.5%) exact matches, in which:
1898 unique CDR3
6 unique J



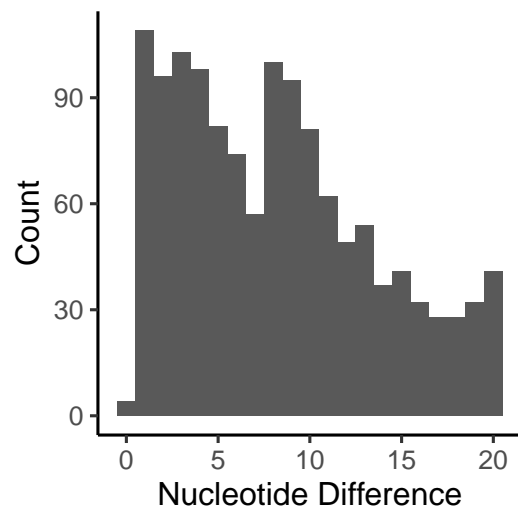
IGHV1/OR15-1*04

4 sequences assigned
No exact matches.



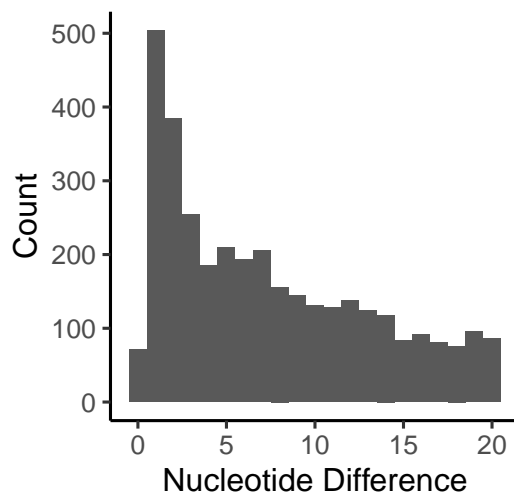
IGHV4-39*07

1679 sequences assigned
4 (0.2%) exact matches, in which:
4 unique CDR3
3 unique J



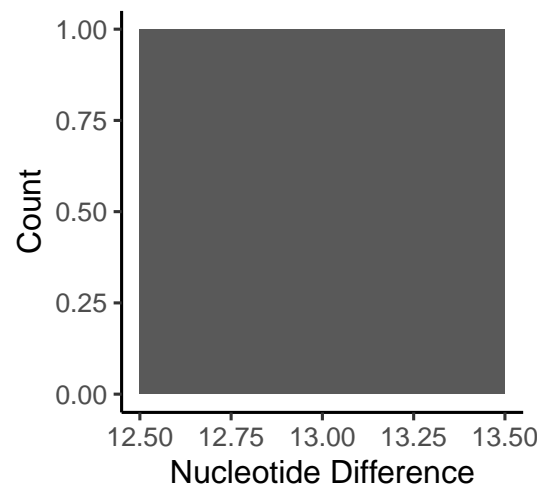
IGHV4-59*12

4115 sequences assigned
71 (1.7%) exact matches, in which:
71 unique CDR3
6 unique J



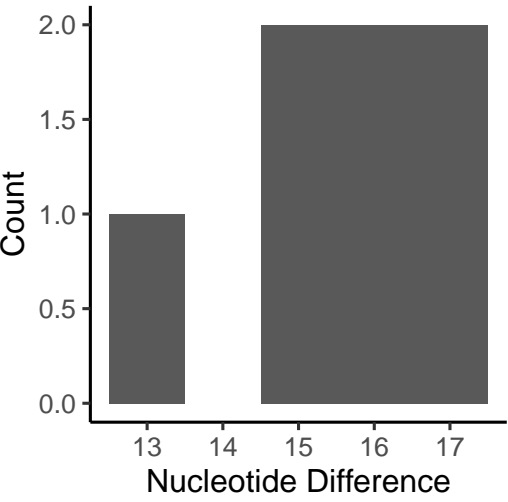
IGHV1/OR15-2*01

1 sequences assigned
No exact matches.



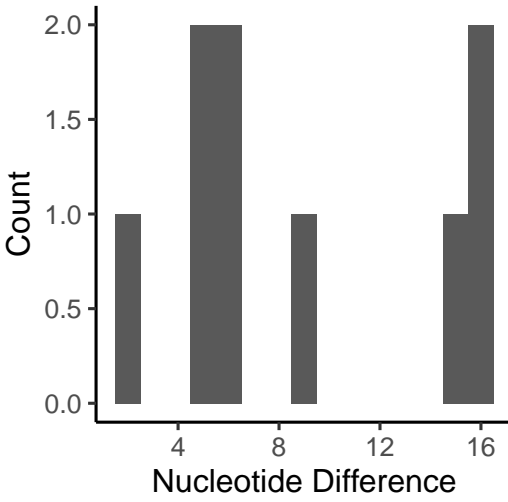
IGHV1/OR15-2*02_03

17 sequences assigned
No exact matches.



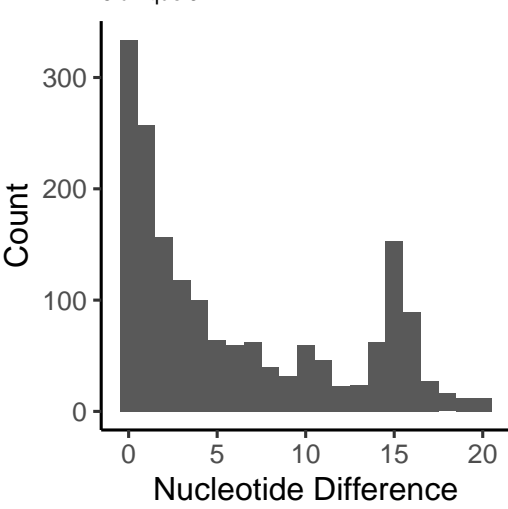
IGHV4/OR15-8*01

12 sequences assigned
No exact matches.



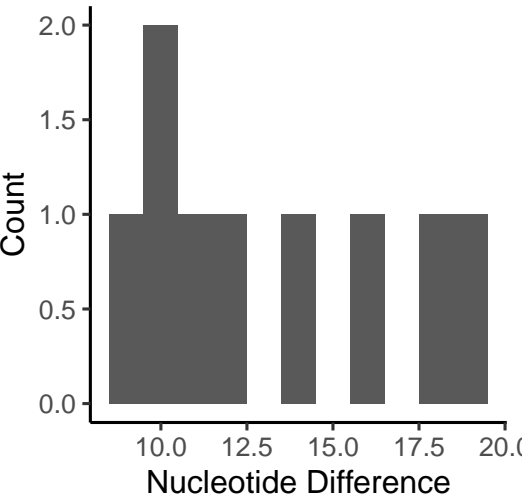
IGHV5-10-1*01_03

2098 sequences assigned
334 (15.9%) exact matches, in which:
310 unique CDR3
6 unique J



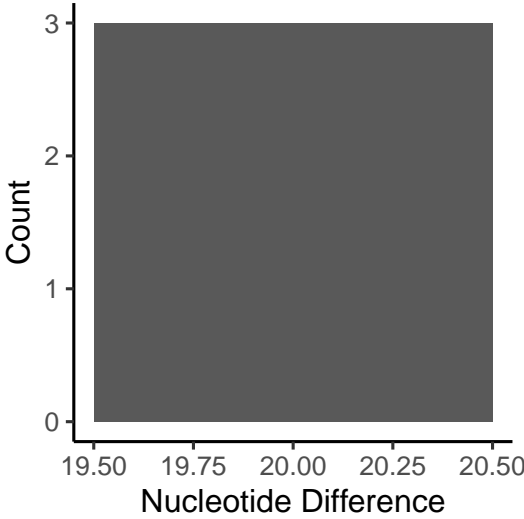
IGHV1/OR15-3*02

9 sequences assigned
No exact matches.



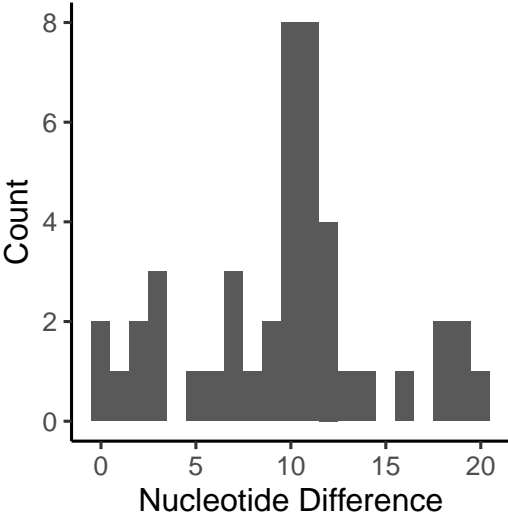
IGHV4/OR15-8*02

15 sequences assigned
No exact matches.



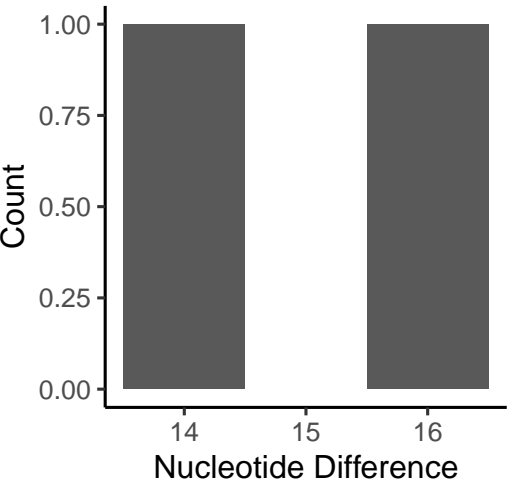
IGHV5-51*04

46 sequences assigned
2 (4.3%) exact matches, in which:
2 unique CDR3
2 unique J



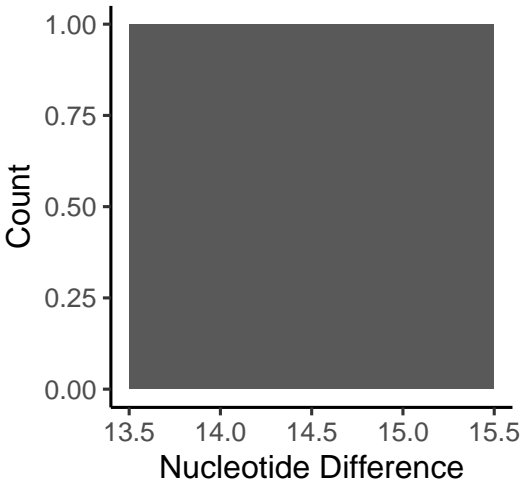
IGHV1/OR15-4*01

2 sequences assigned
No exact matches.



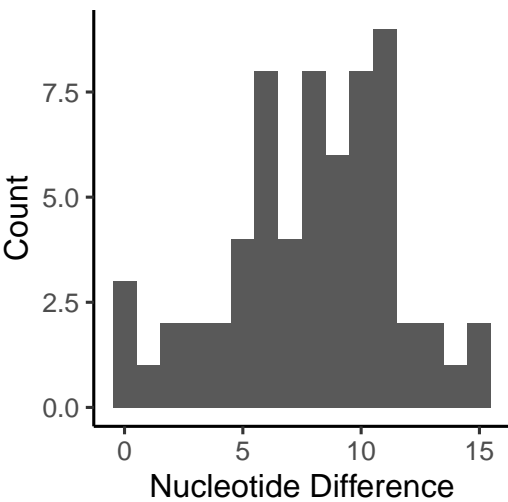
IGHV4/OR15-8*03

3 sequences assigned
No exact matches.



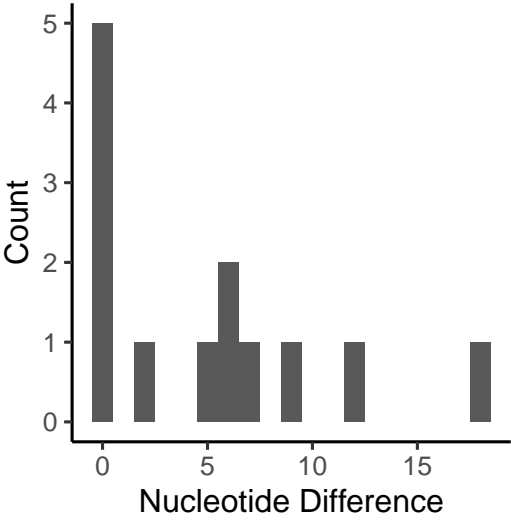
IGHV5-51*06

65 sequences assigned
3 (4.6%) exact matches, in which:
3 unique CDR3
2 unique J



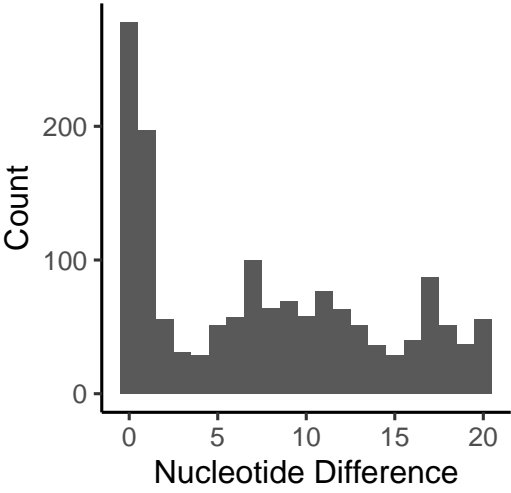
IGHV5–51*07

14 sequences assigned
5 (35.7%) exact matches, in which:
5 unique CDR3
2 unique J



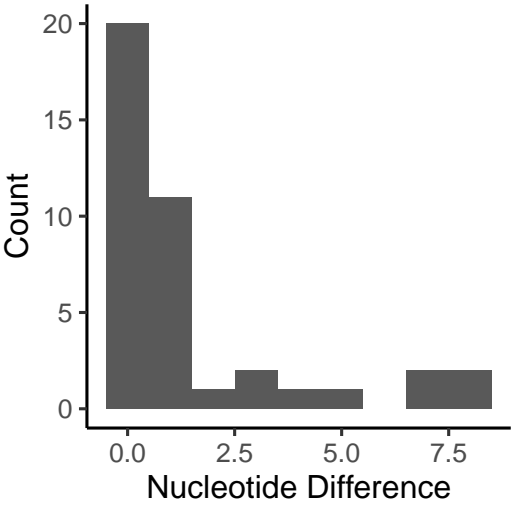
IGHV6–1*01_02

1672 sequences assigned
278 (16.6%) exact matches, in which:
263 unique CDR3
6 unique J

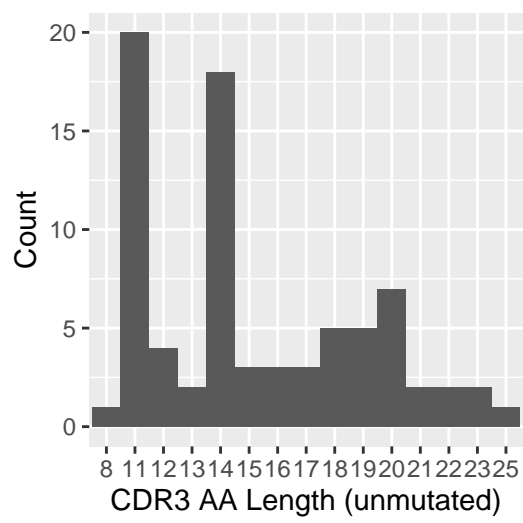


IGHV7–4–1*01_T63C

40 sequences assigned
20 (50%) exact matches, in which:
20 unique CDR3
4 unique J



IGHV3-72*01_T159A_C162T_C163T_G164T_T165C_C167T_A173G_A181T_C183T_A184G_T18



IGHV7-4-1*01_T63C

