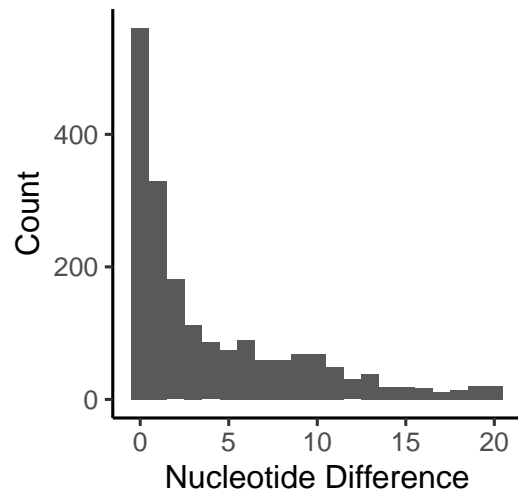


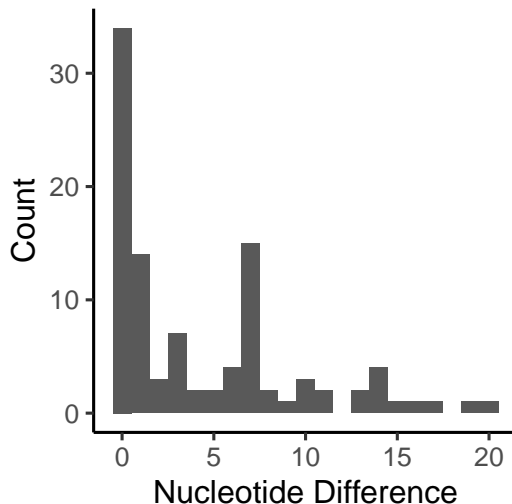
IGHV1-60*01_S7772

1956 sequences assigned
561 (28.7%) exact matches, in which:
443 unique CDR3
9 unique J



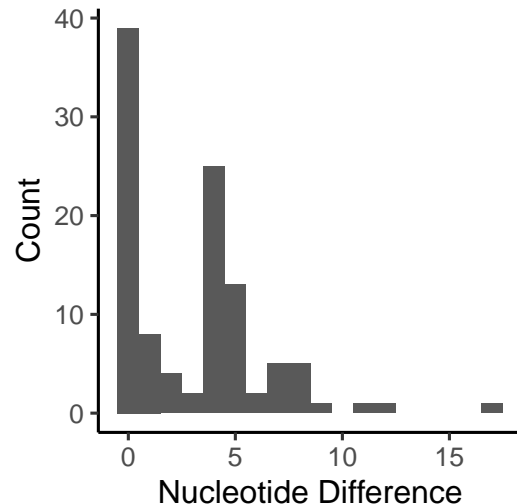
IGHV1-124*01_S6748

100 sequences assigned
34 (34%) exact matches, in which:
24 unique CDR3
5 unique J



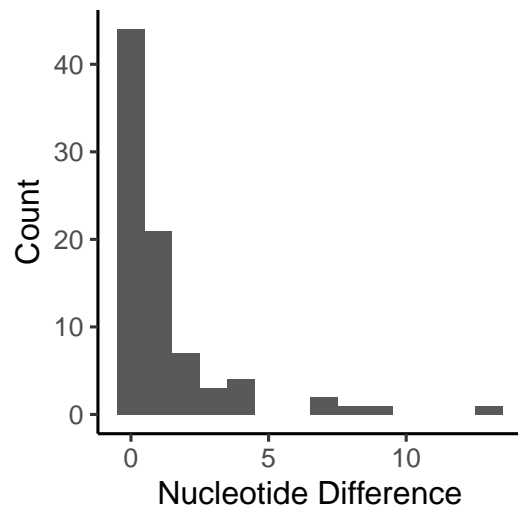
IGHV1-138*01_S2734

107 sequences assigned
39 (36.4%) exact matches, in which:
32 unique CDR3
6 unique J



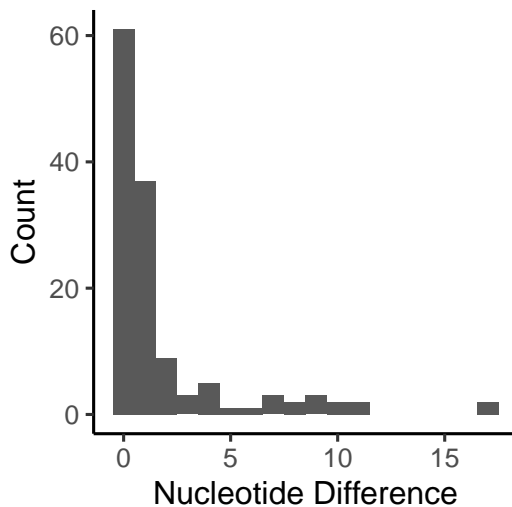
IGHV1-84*01_S4048

84 sequences assigned
44 (52.4%) exact matches, in which:
27 unique CDR3
5 unique J



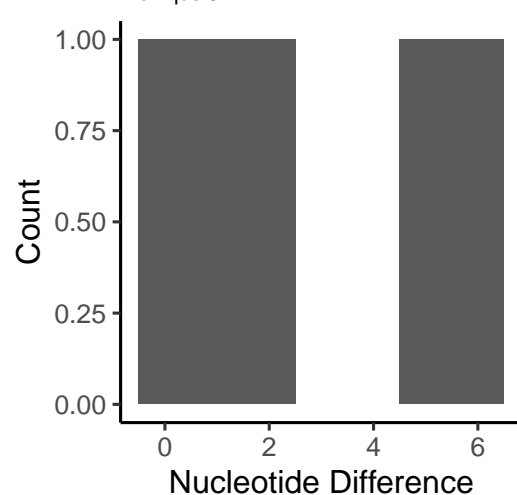
IGHV1-138*01_S0851

131 sequences assigned
61 (46.6%) exact matches, in which:
54 unique CDR3
7 unique J



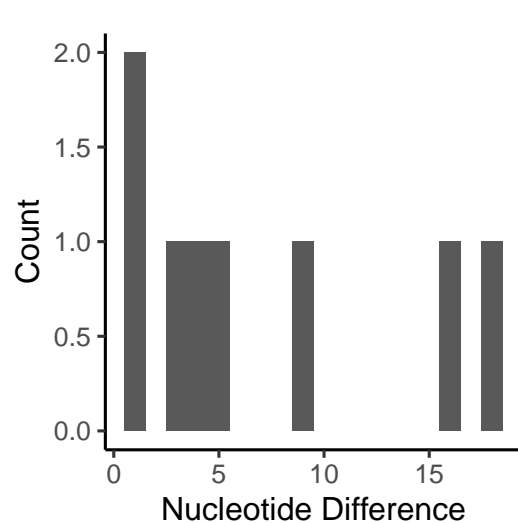
IGHV1-170*01_S3055

5 sequences assigned
1 (20%) exact matches, in which:
1 unique CDR3
1 unique J



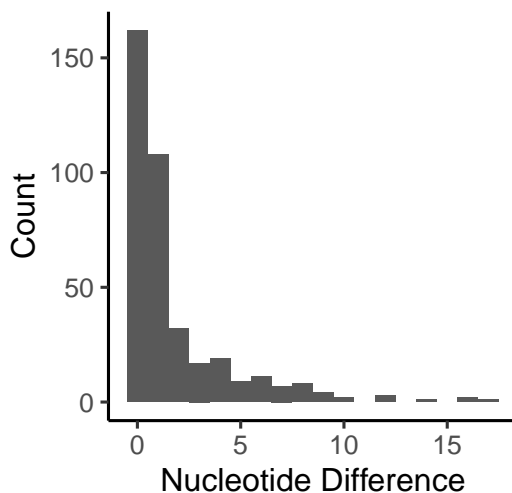
IGHV1-105*01_S1228

9 sequences assigned
No exact matches.



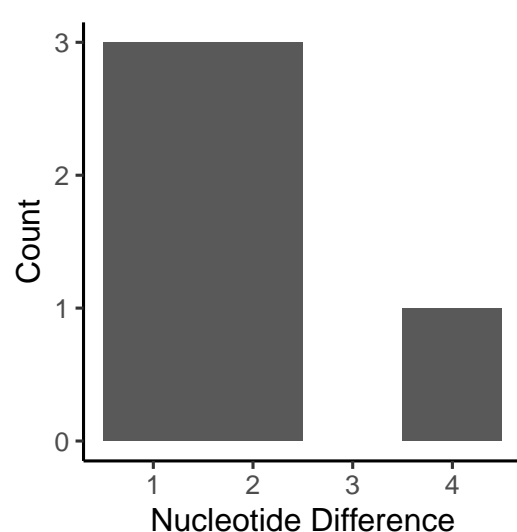
IGHV1-138*01_S2054

387 sequences assigned
162 (41.9%) exact matches, in which:
144 unique CDR3
7 unique J



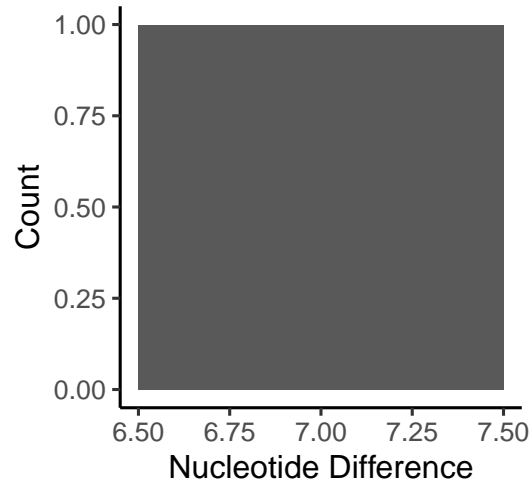
IGHV1-NL_1*01_S2052

7 sequences assigned
No exact matches.



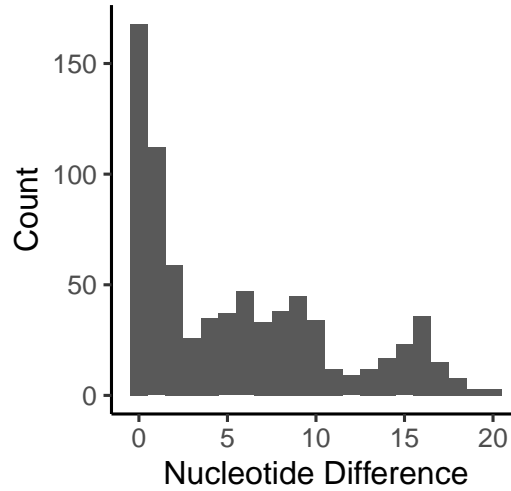
IGHV1-NL_1*01_S8523

1 sequences assigned
No exact matches.



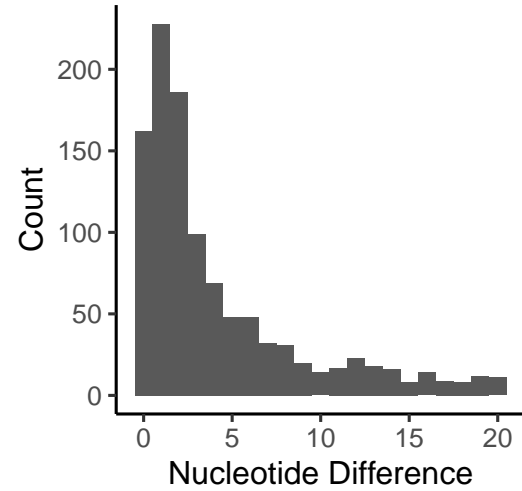
IGHV2-7*02_S3534

792 sequences assigned
168 (21.2%) exact matches, in which:
133 unique CDR3
7 unique J



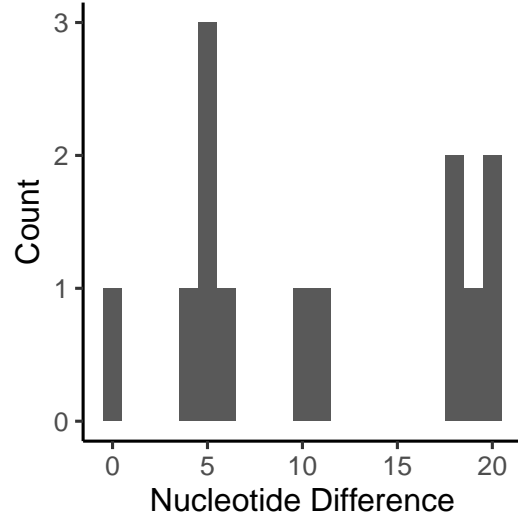
IGHV2-69*01_S0230

1164 sequences assigned
162 (13.9%) exact matches, in which:
126 unique CDR3
7 unique J



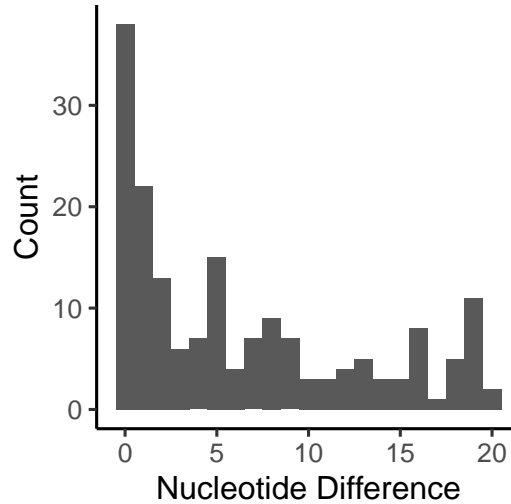
IGHV1-NL_2*01_S2245

13 sequences assigned
1 (7.7%) exact matches, in which:
1 unique CDR3
1 unique J



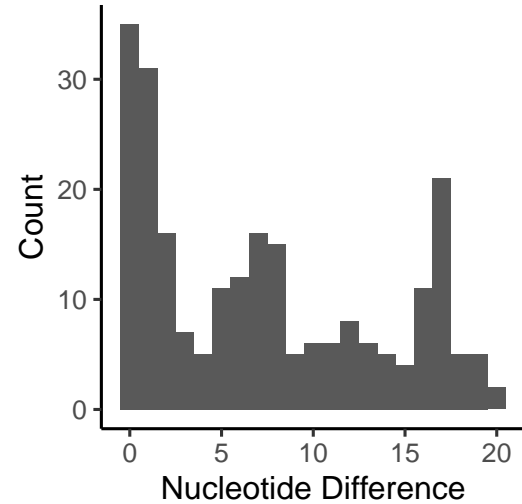
IGHV2-7*02_S3534_G292

186 sequences assigned
38 (20.4%) exact matches, in which:
35 unique CDR3
5 unique J



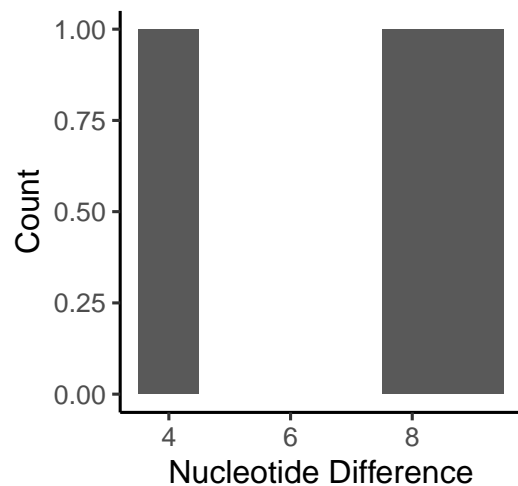
IGHV2-118*01_S0293

367 sequences assigned
35 (9.5%) exact matches, in which:
24 unique CDR3
4 unique J



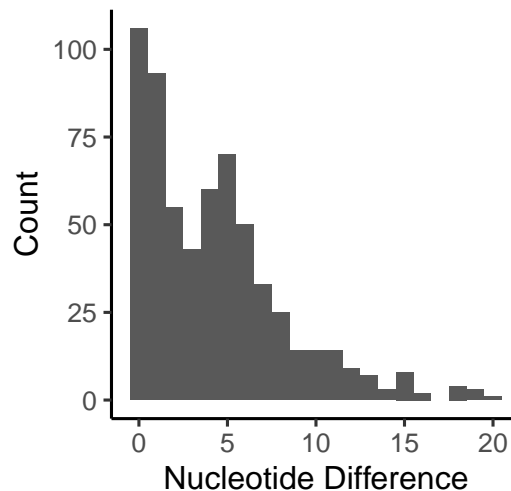
IGHV1-NL_2*01_S9602

3 sequences assigned
No exact matches.



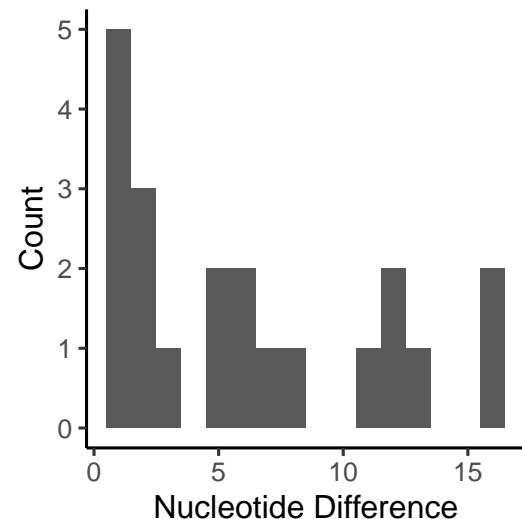
IGHV2-7*02_S4285

627 sequences assigned
106 (16.9%) exact matches, in which:
87 unique CDR3
8 unique J



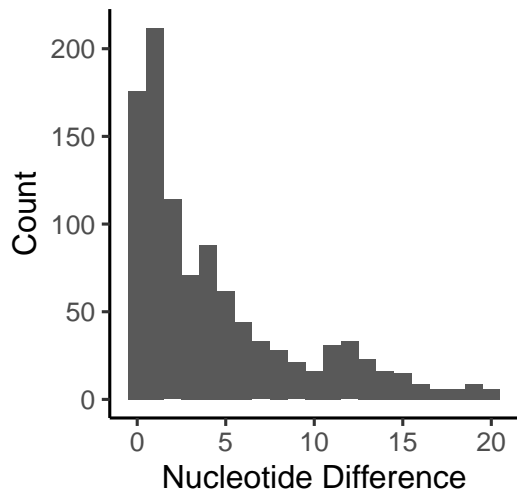
IGHV2-173*01_S2781

25 sequences assigned
No exact matches.



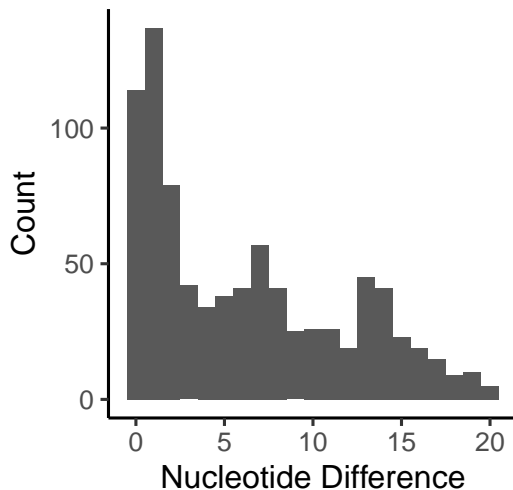
IGHV2–NL_1*01_S4605

1039 sequences assigned
176 (16.9%) exact matches, in which:
134 unique CDR3
6 unique J



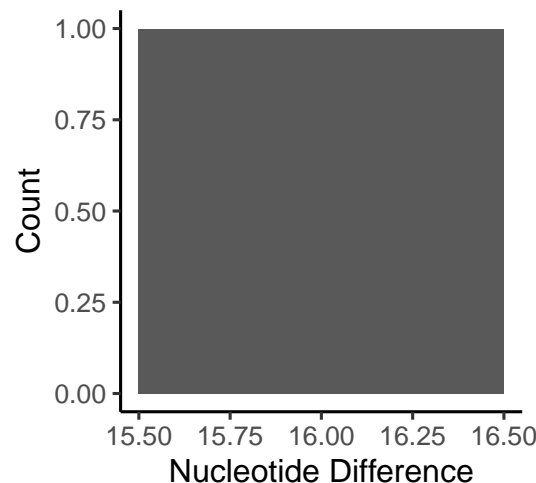
IGHV2–NL_2*01_S2193

904 sequences assigned
114 (12.6%) exact matches, in which:
85 unique CDR3
7 unique J



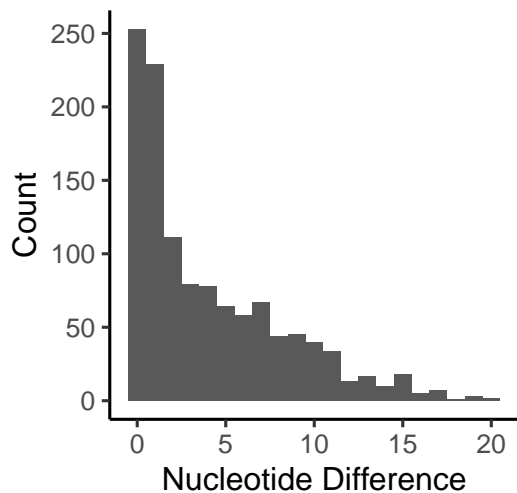
IGHV3–28*01_S3617

8 sequences assigned
No exact matches.



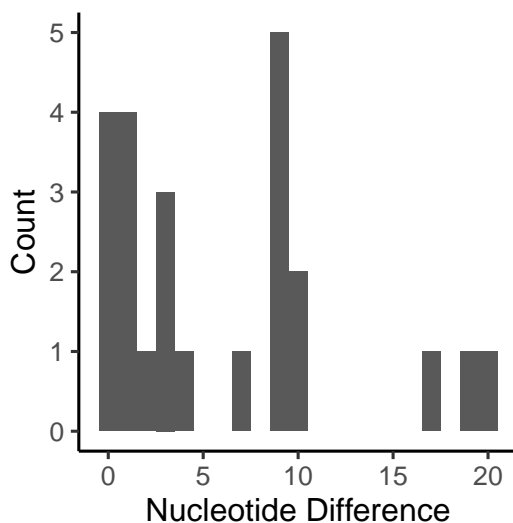
IGHV2–NL_1*01_S7937

1266 sequences assigned
253 (20%) exact matches, in which:
196 unique CDR3
7 unique J



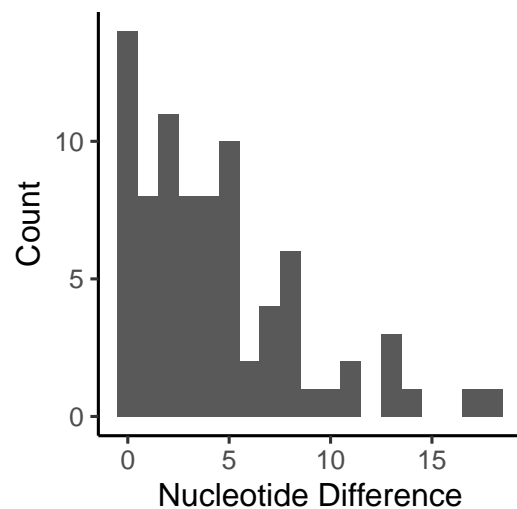
IGHV3–5*01_S1720

25 sequences assigned
4 (16%) exact matches, in which:
3 unique CDR3
1 unique J



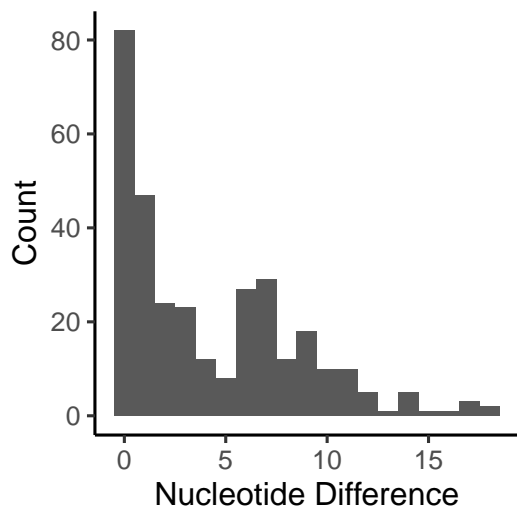
IGHV3–36*01_S1803

83 sequences assigned
14 (16.9%) exact matches, in which:
13 unique CDR3
5 unique J



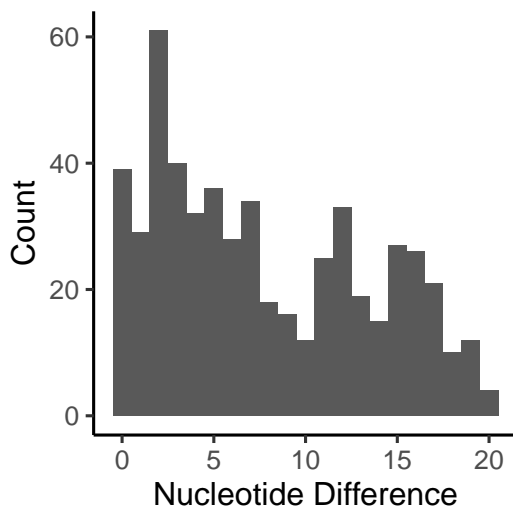
IGHV2–NL_1*01_S7937_C

327 sequences assigned
82 (25.1%) exact matches, in which:
76 unique CDR3
6 unique J



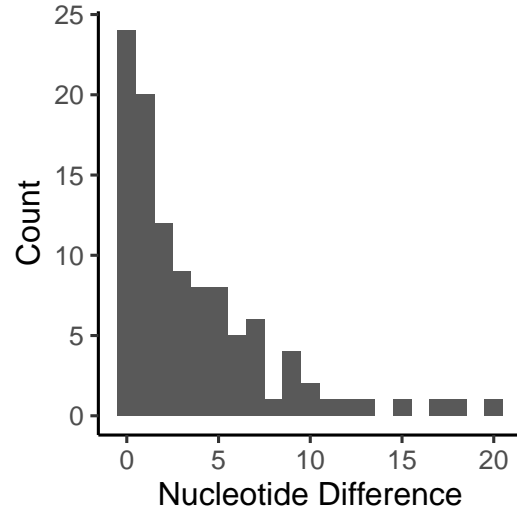
IGHV3–9*01_S0778

577 sequences assigned
39 (6.8%) exact matches, in which:
35 unique CDR3
6 unique J



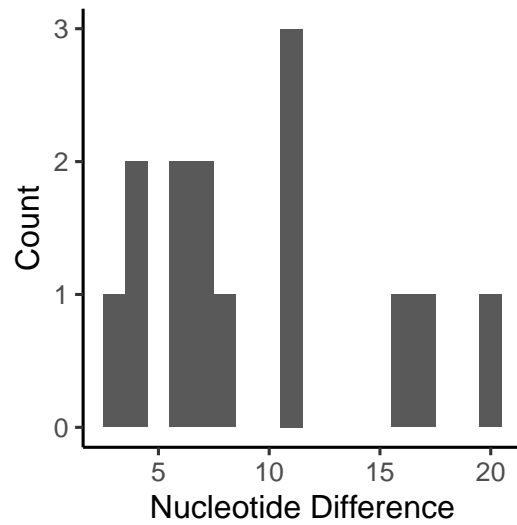
IGHV3–36*01_S6740

108 sequences assigned
24 (22.2%) exact matches, in which:
20 unique CDR3
5 unique J



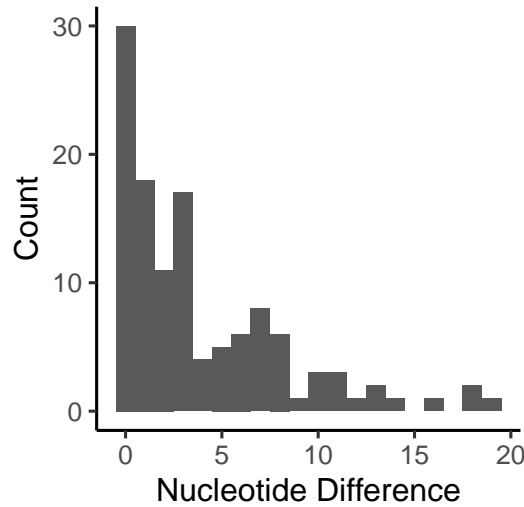
IGHV3-37*01_S0586

18 sequences assigned
No exact matches.



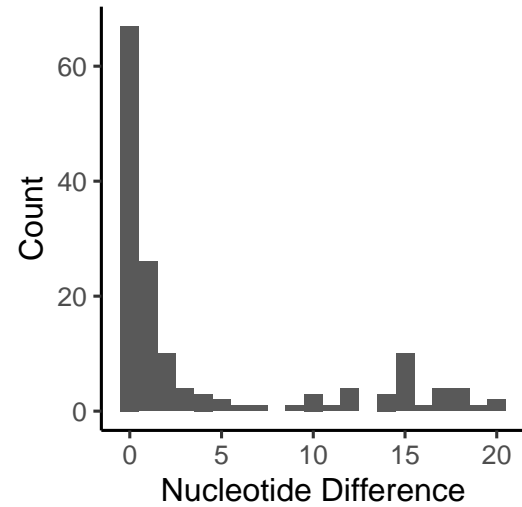
IGHV3-52*02_S4550

121 sequences assigned
30 (24.8%) exact matches, in which:
25 unique CDR3
6 unique J



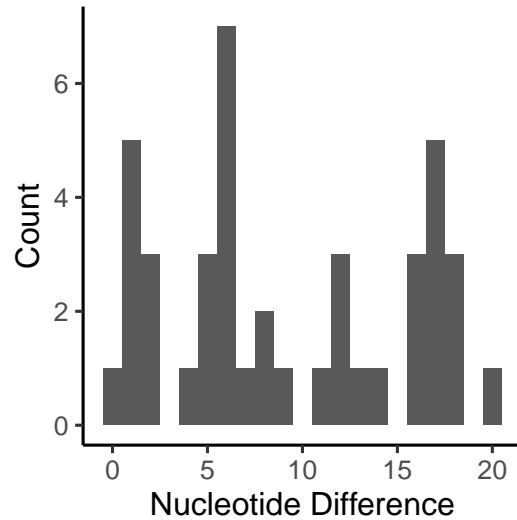
IGHV3-73*01_S7929

161 sequences assigned
67 (41.6%) exact matches, in which:
54 unique CDR3
7 unique J



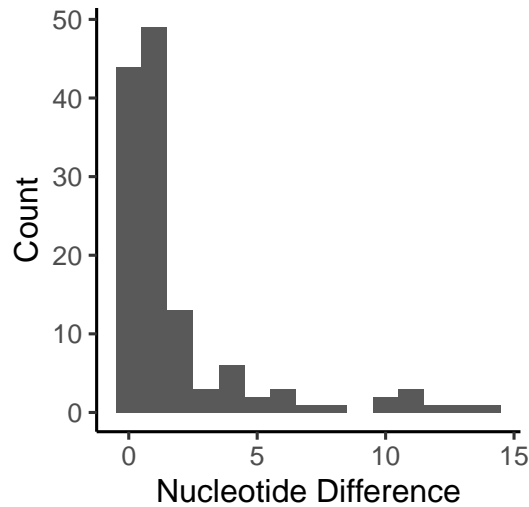
IGHV3-50*01_S1879

61 sequences assigned
1 (1.6%) exact matches, in which:
1 unique CDR3
1 unique J



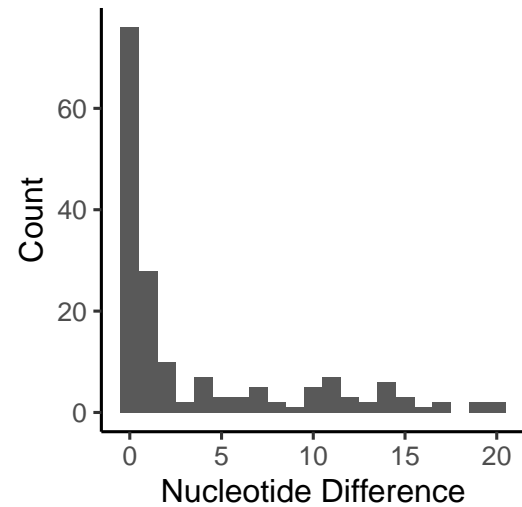
IGHV3-52*02_S6213

130 sequences assigned
44 (33.8%) exact matches, in which:
38 unique CDR3
5 unique J



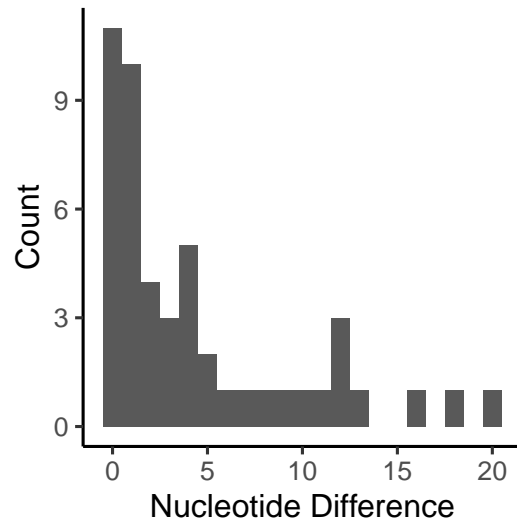
IGHV3-73*02_S4889

172 sequences assigned
76 (44.2%) exact matches, in which:
62 unique CDR3
7 unique J



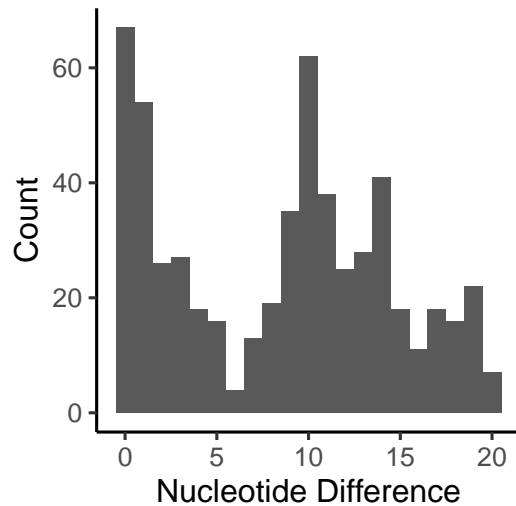
IGHV3-50*01_S8530

49 sequences assigned
11 (22.4%) exact matches, in which:
9 unique CDR3
3 unique J



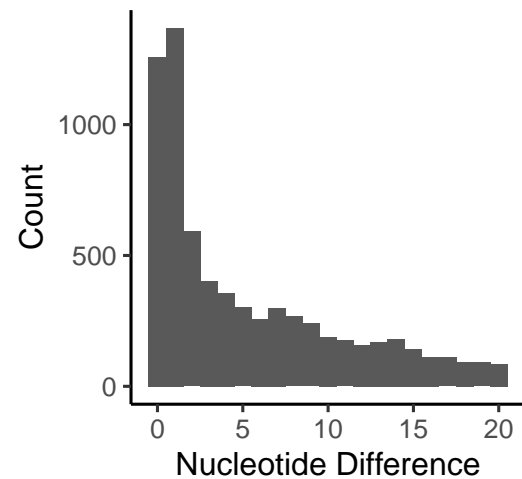
IGHV3-53*01_S3647

603 sequences assigned
67 (11.1%) exact matches, in which:
59 unique CDR3
4 unique J



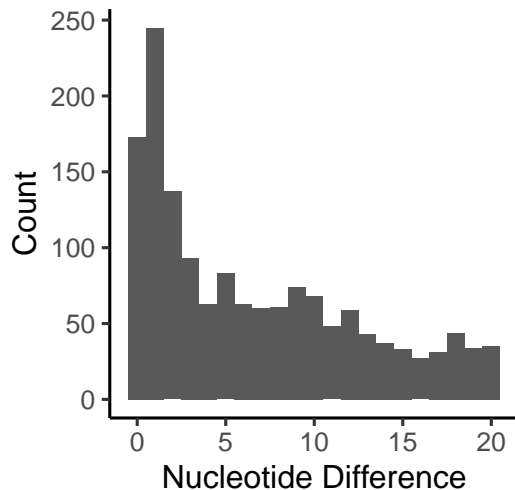
IGHV3-76*01_S9591

7315 sequences assigned
1259 (17.2%) exact matches, in which:
1008 unique CDR3
9 unique J



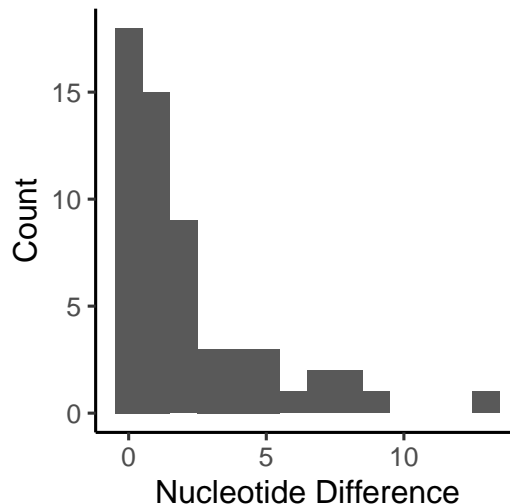
IGHV3-76*02_S4686

1733 sequences assigned
173 (10%) exact matches, in which:
139 unique CDR3
9 unique J



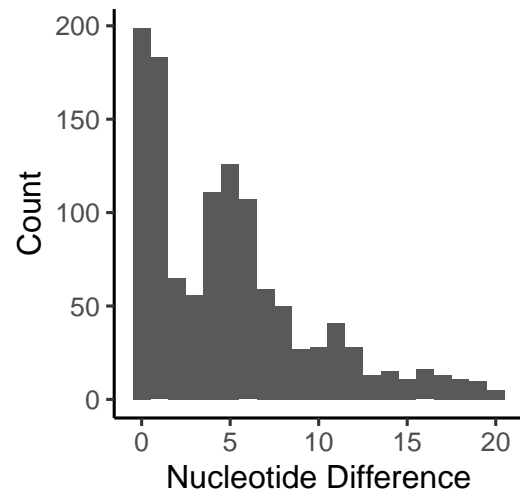
IGHV3-87*01_S1401

61 sequences assigned
18 (29.5%) exact matches, in which:
14 unique CDR3
6 unique J



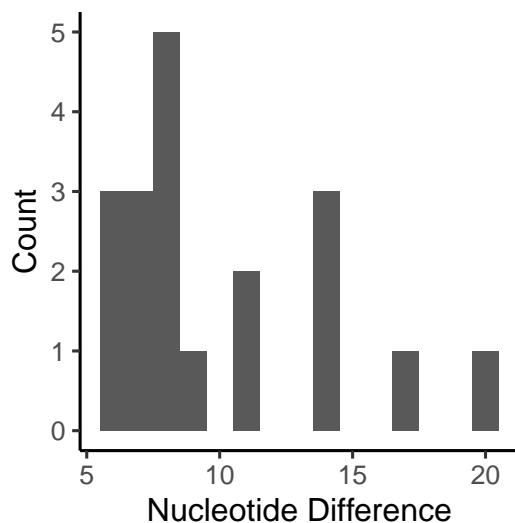
IGHV3-94*01_S8766

1221 sequences assigned
199 (16.3%) exact matches, in which:
165 unique CDR3
7 unique J



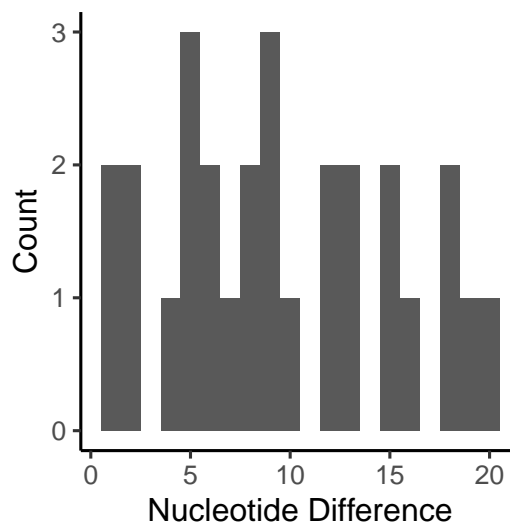
IGHV3-83*02_S1476

20 sequences assigned
No exact matches.



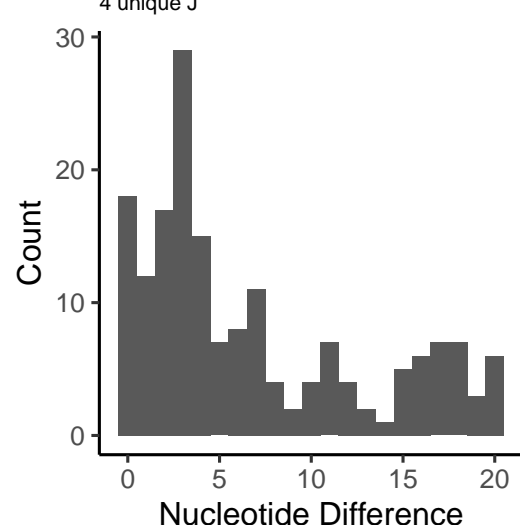
IGHV3-88*01_S6871

31 sequences assigned
No exact matches.



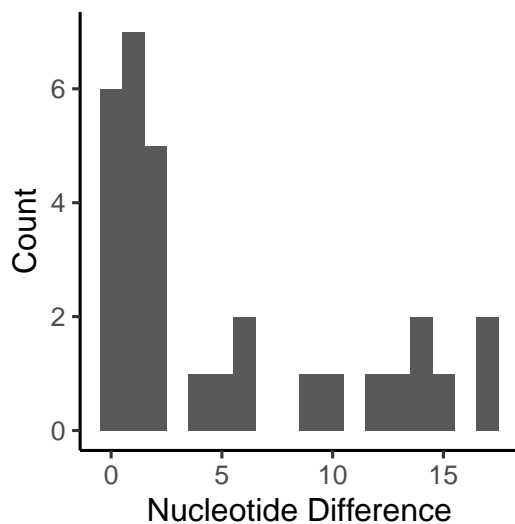
IGHV3-100*01_S4375

195 sequences assigned
18 (9.2%) exact matches, in which:
17 unique CDR3
4 unique J



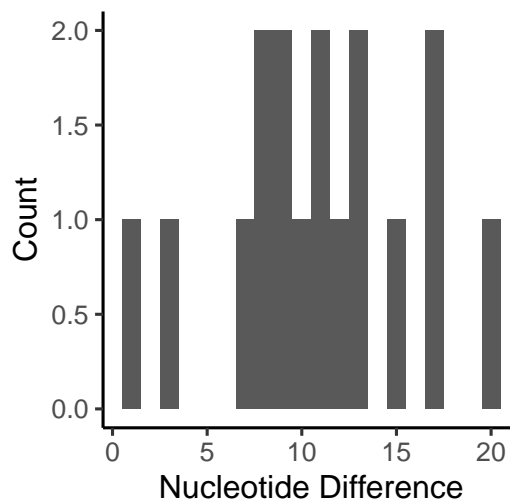
IGHV3-83*02_S3364

32 sequences assigned
6 (18.8%) exact matches, in which:
6 unique CDR3
2 unique J



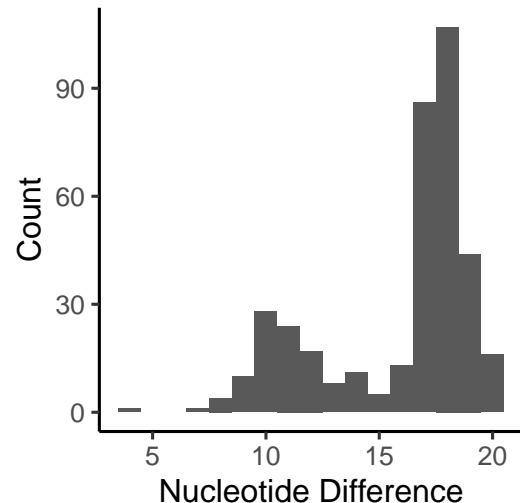
IGHV3-88*02_S9033

22 sequences assigned
No exact matches.



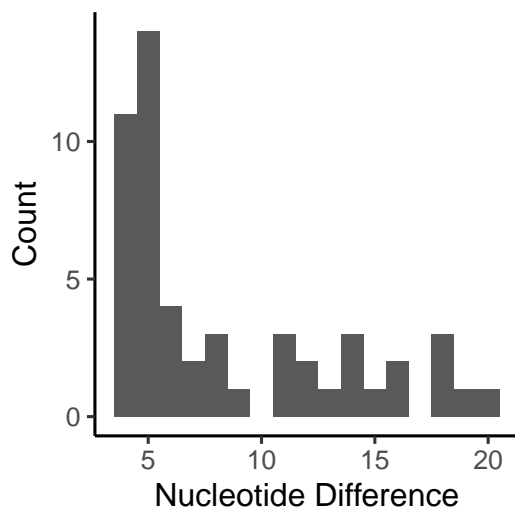
IGHV3-103*01_S1165

484 sequences assigned
No exact matches.



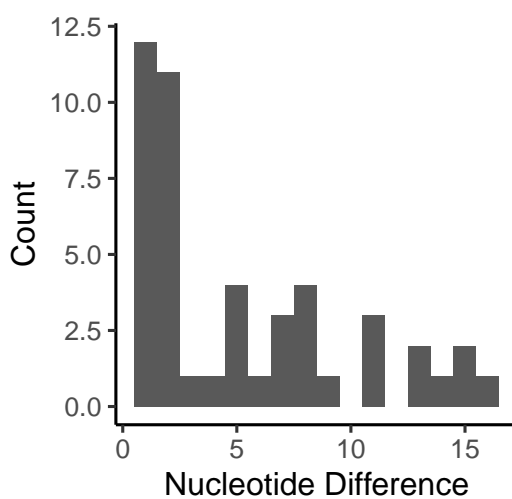
IGHV3-103*01_S6076

83 sequences assigned
No exact matches.



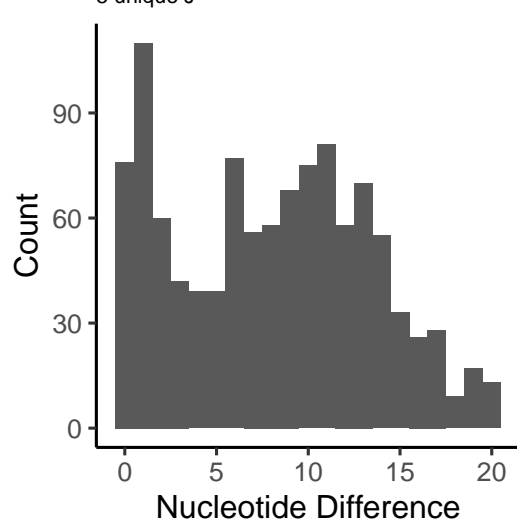
IGHV3-120*01_S7674

50 sequences assigned
No exact matches.



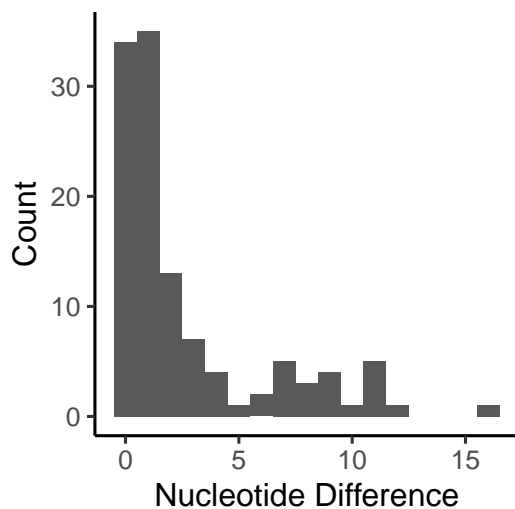
IGHV3-128*01_S6300

1215 sequences assigned
76 (6.3%) exact matches, in which:
64 unique CDR3
5 unique J



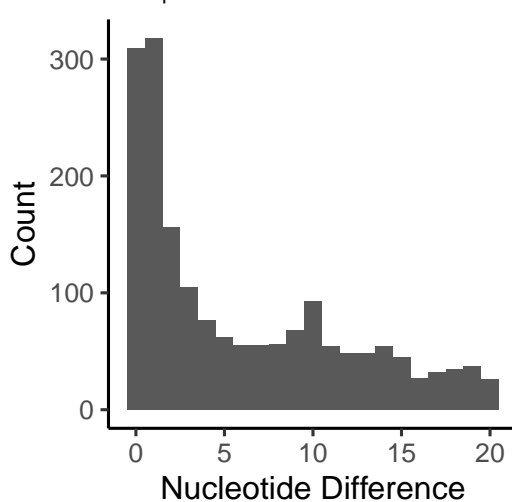
IGHV3-119*01_S1683

117 sequences assigned
34 (29.1%) exact matches, in which:
23 unique CDR3
5 unique J



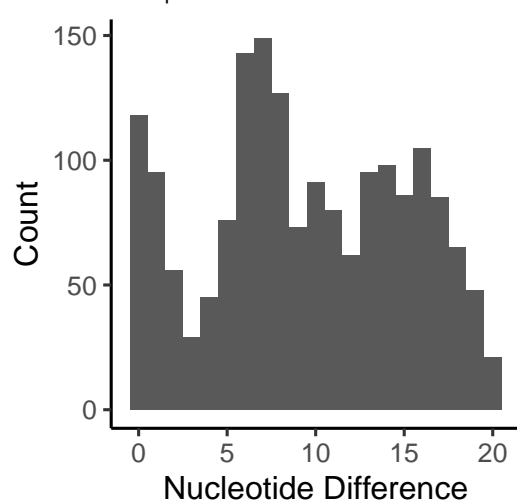
IGHV3-122*01_S0584

1951 sequences assigned
309 (15.8%) exact matches, in which:
244 unique CDR3
9 unique J



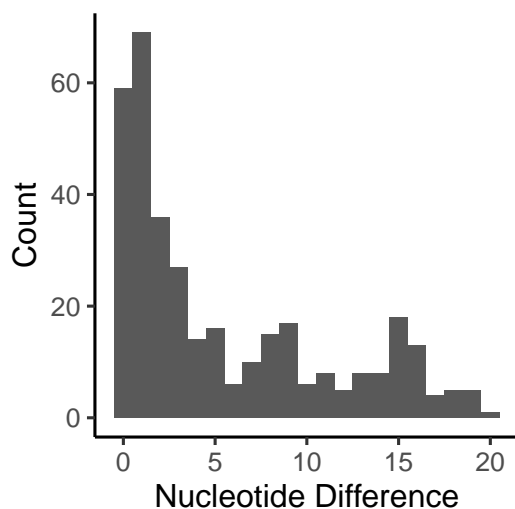
IGHV3-128*02_S7423

1867 sequences assigned
118 (6.3%) exact matches, in which:
85 unique CDR3
7 unique J



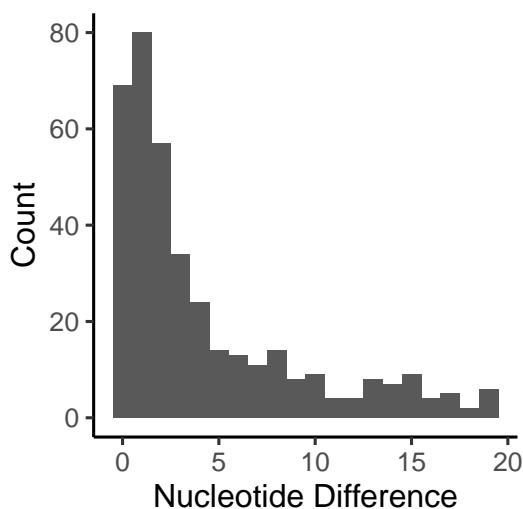
IGHV3-119*01_S5944

358 sequences assigned
59 (16.5%) exact matches, in which:
50 unique CDR3
4 unique J



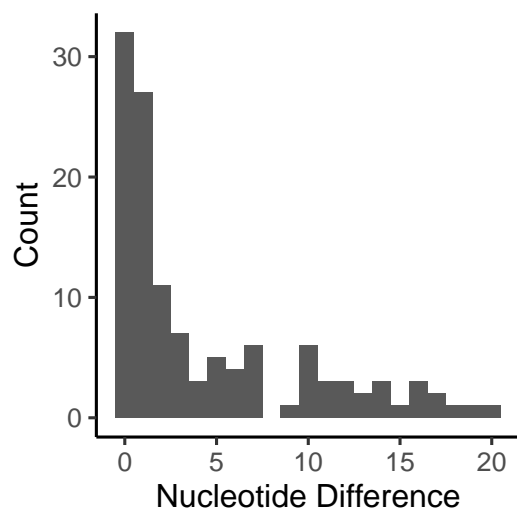
IGHV3-127*01_S6769

390 sequences assigned
69 (17.7%) exact matches, in which:
58 unique CDR3
6 unique J



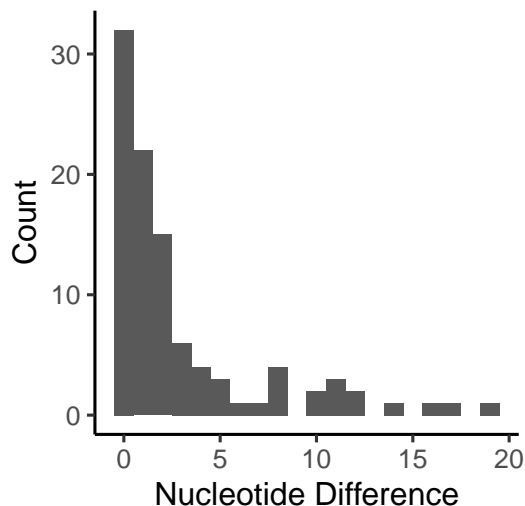
IGHV3-141*01_S2251

124 sequences assigned
32 (25.8%) exact matches, in which:
29 unique CDR3
5 unique J



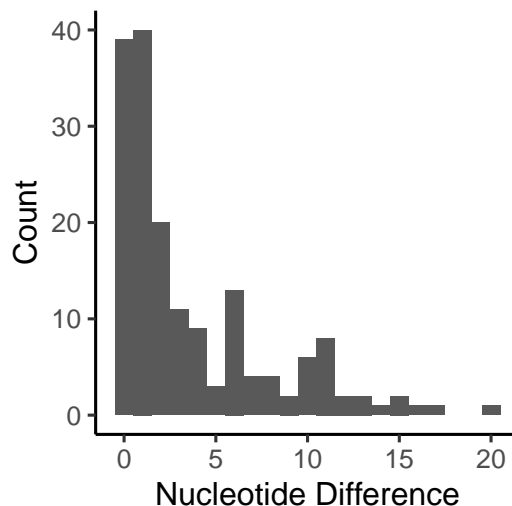
IGHV3-141*02_S4330

100 sequences assigned
32 (32%) exact matches, in which:
31 unique CDR3
5 unique J



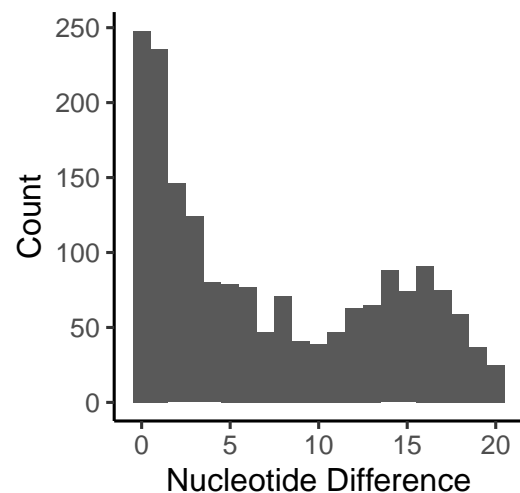
IGHV3-172*01_S1597

172 sequences assigned
39 (22.7%) exact matches, in which:
37 unique CDR3
7 unique J



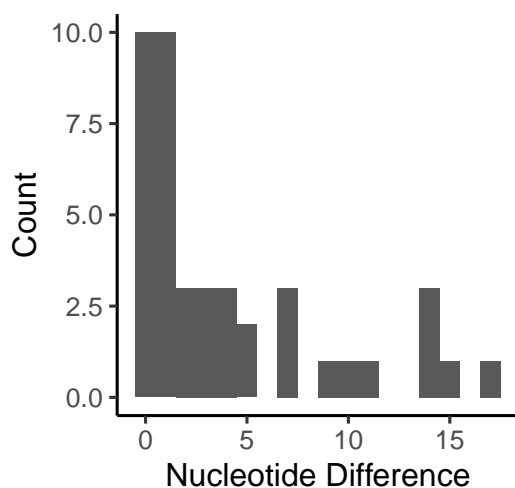
IGHV3-187*01_S9337

2209 sequences assigned
248 (11.2%) exact matches, in which:
199 unique CDR3
7 unique J



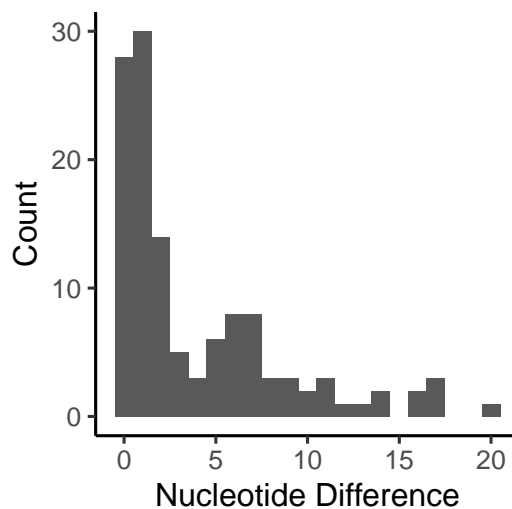
IGHV3-143*01_S1591

44 sequences assigned
10 (22.7%) exact matches, in which:
8 unique CDR3
3 unique J



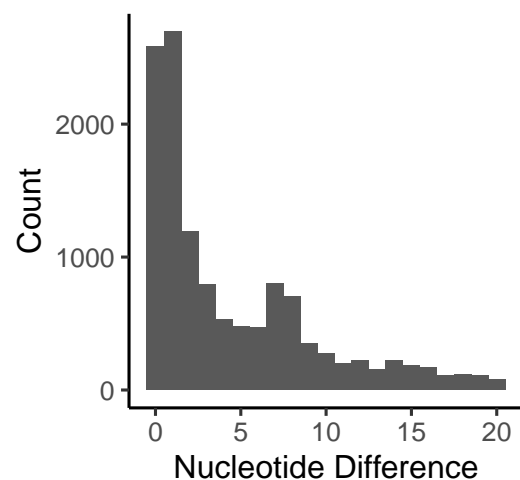
IGHV3-172*01_S8488

124 sequences assigned
28 (22.6%) exact matches, in which:
21 unique CDR3
6 unique J



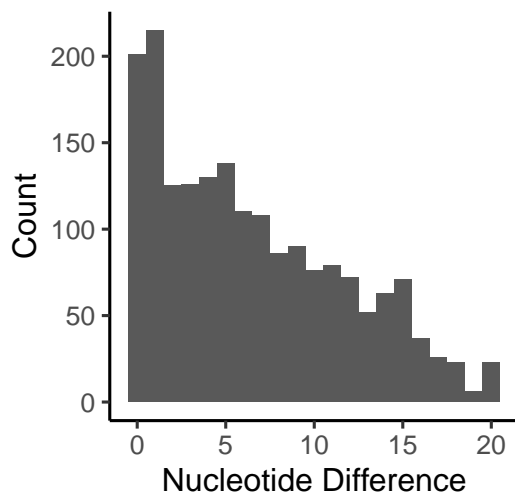
IGHV3-NL_1*01_S1988

12836 sequences assigned
2586 (20.1%) exact matches, in which:
2105 unique CDR3
10 unique J



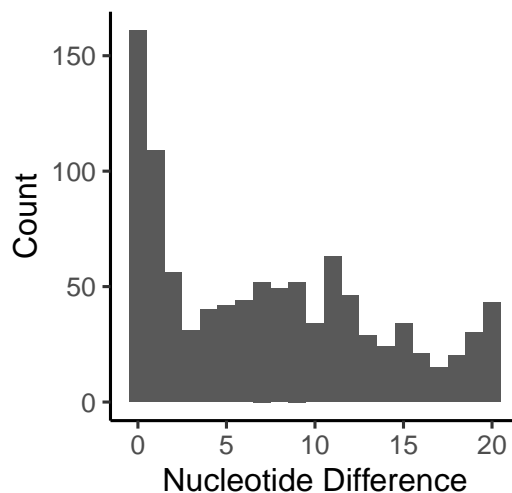
IGHV3-152*01_S7388

2074 sequences assigned
201 (9.7%) exact matches, in which:
176 unique CDR3
6 unique J



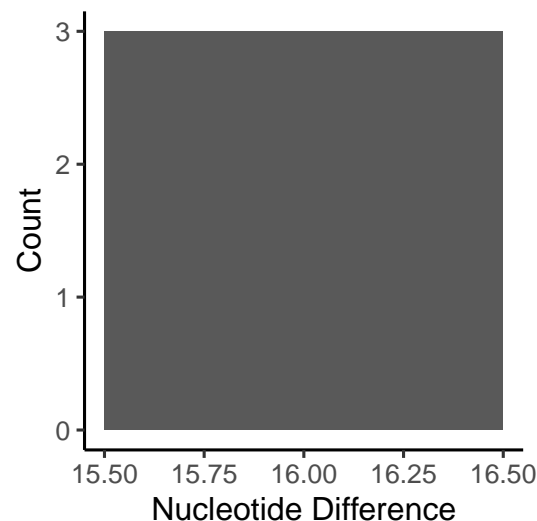
IGHV3-177*01_S8409

1095 sequences assigned
161 (14.7%) exact matches, in which:
127 unique CDR3
7 unique J



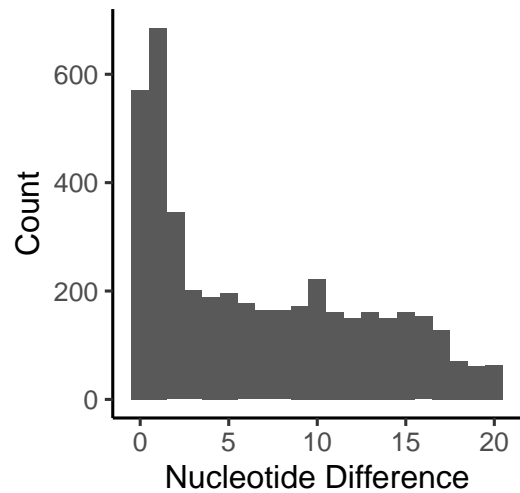
IGHV3-NL_10*02_S3155

5 sequences assigned
No exact matches.



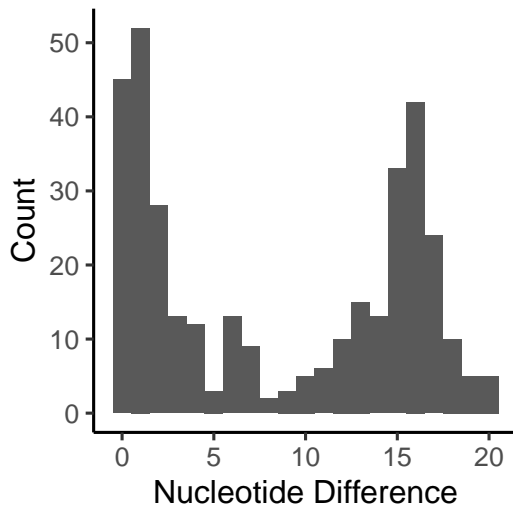
IGHV3–NL_11*01_S4102

4804 sequences assigned
571 (11.9%) exact matches, in which:
481 unique CDR3
7 unique J



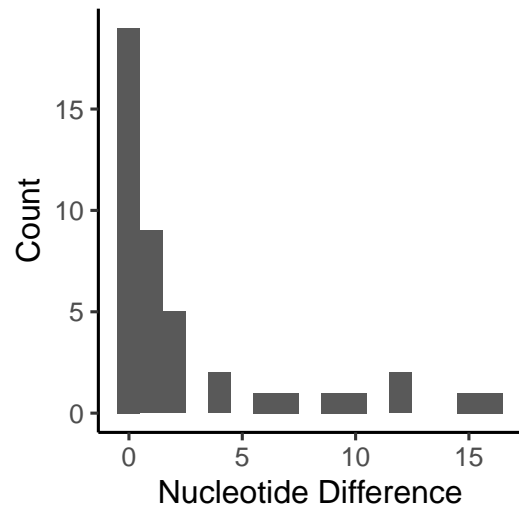
IGHV3–NL_13*01_S3277

386 sequences assigned
45 (11.7%) exact matches, in which:
34 unique CDR3
6 unique J



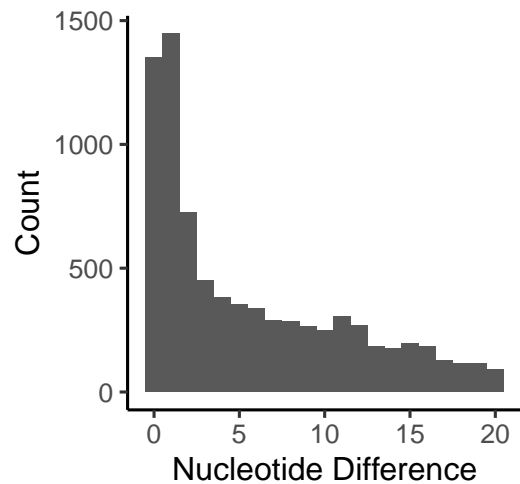
IGHV3–NL_16*01_S7825

43 sequences assigned
19 (44.2%) exact matches, in which:
18 unique CDR3
5 unique J



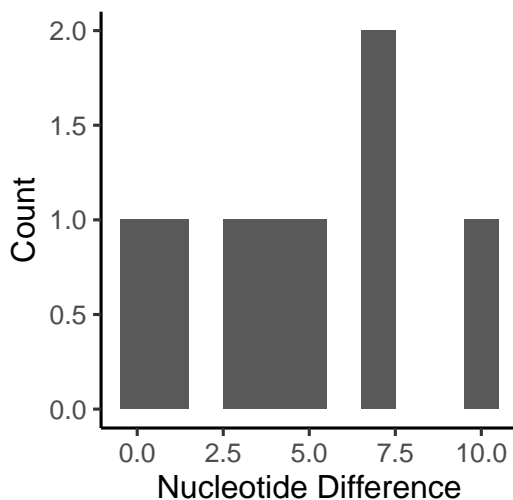
IGHV3–NL_11*01_S438

8436 sequences assigned
1352 (16%) exact matches, in which:
1117 unique CDR3
8 unique J



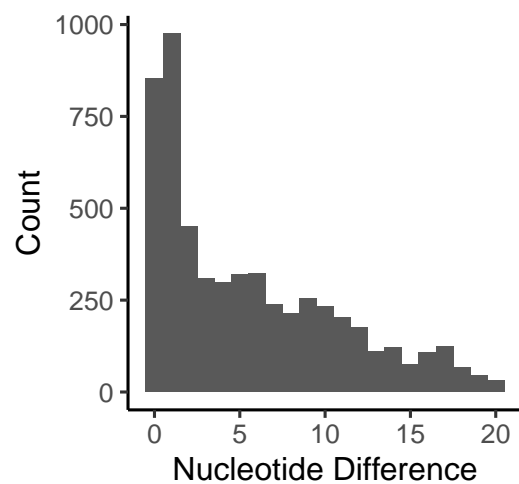
IGHV3–NL_14*01_S9823

10 sequences assigned
1 (10%) exact matches, in which:
1 unique CDR3
1 unique J



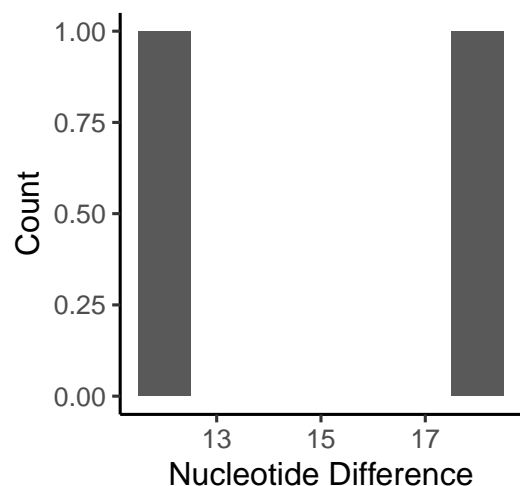
IGHV3–NL_17*01_S425

5835 sequences assigned
853 (14.6%) exact matches, in which:
698 unique CDR3
7 unique J



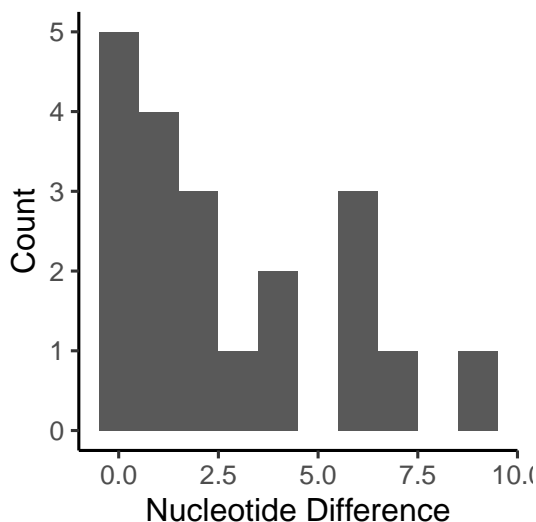
IGHV3–NL_12*02_S2468

2 sequences assigned
No exact matches.



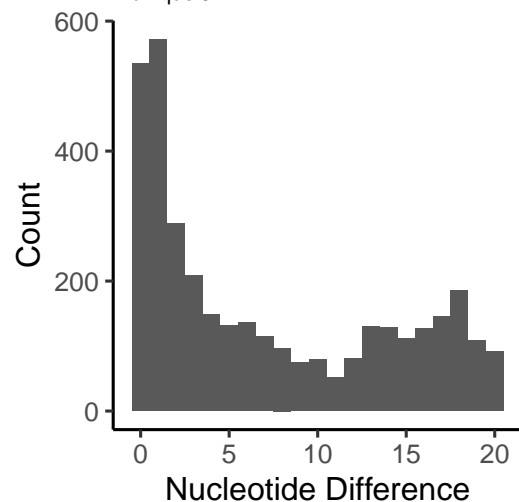
IGHV3–NL_16*01_S5994

20 sequences assigned
5 (25%) exact matches, in which:
5 unique CDR3
3 unique J



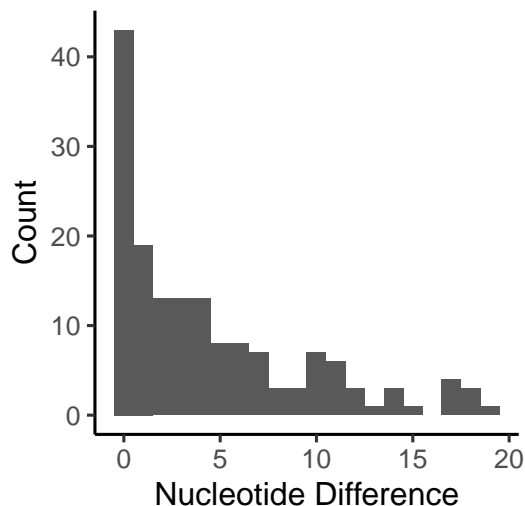
IGHV3–NL_17*01_S6268

3860 sequences assigned
535 (13.9%) exact matches, in which:
420 unique CDR3
7 unique J



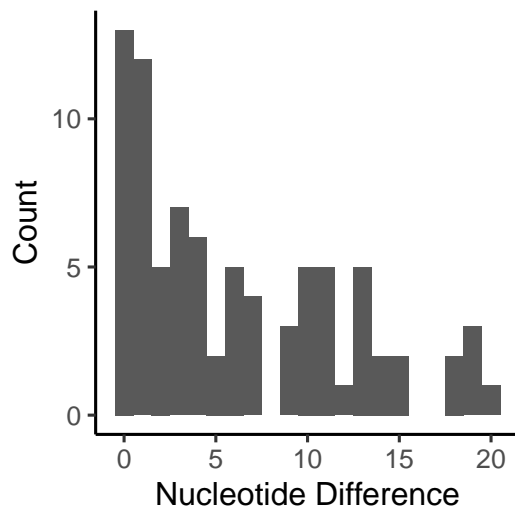
IGHV3–NL_18*01_S3886

164 sequences assigned
43 (26.2%) exact matches, in which:
36 unique CDR3
7 unique J



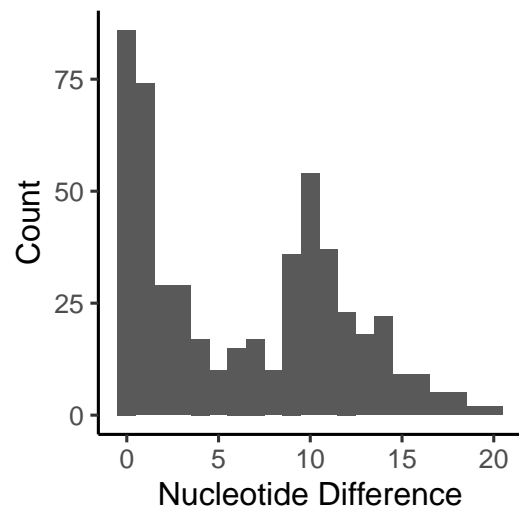
IGHV3–NL_2*01_S9710

121 sequences assigned
13 (10.7%) exact matches, in which:
12 unique CDR3
4 unique J



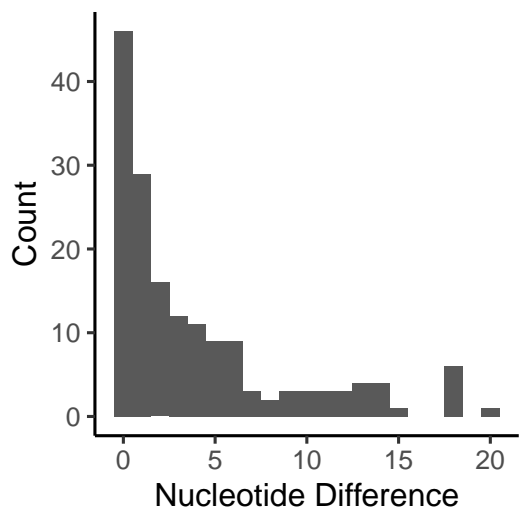
IGHV3–NL_8*01_S7415

535 sequences assigned
86 (16.1%) exact matches, in which:
68 unique CDR3
5 unique J



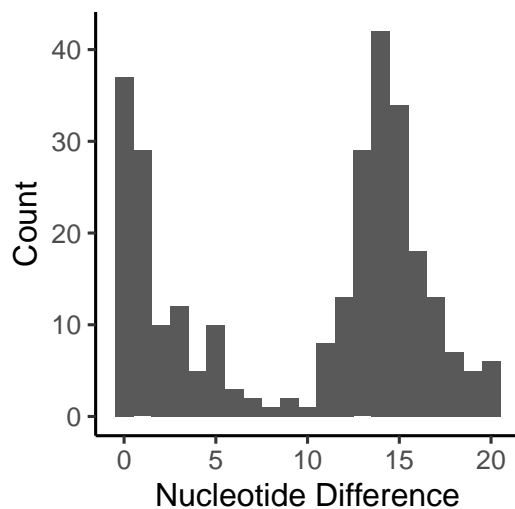
IGHV3–NL_18*01_S6396

172 sequences assigned
46 (26.7%) exact matches, in which:
41 unique CDR3
6 unique J



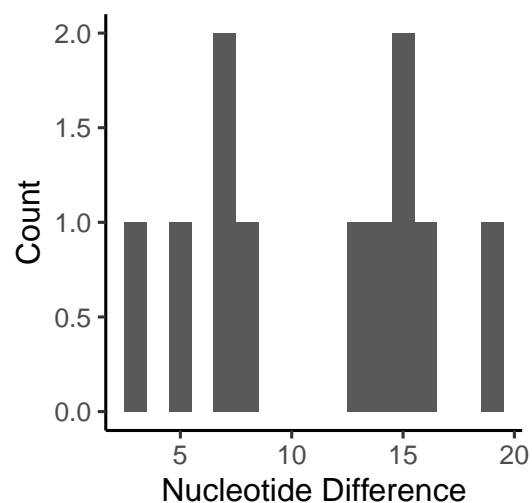
IGHV3–NL_4*01_S6875

306 sequences assigned
37 (12.1%) exact matches, in which:
31 unique CDR3
6 unique J



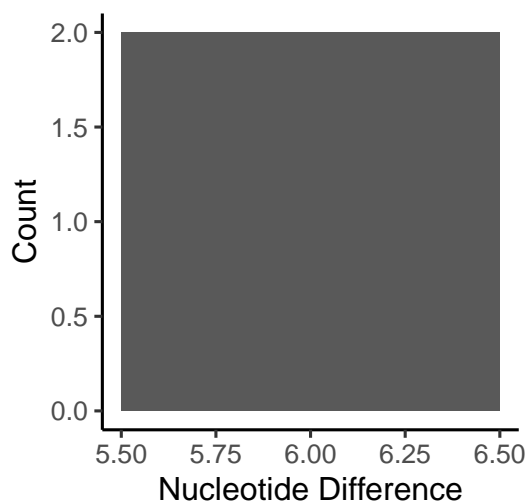
IGHV3–NL_9*01_S6098

18 sequences assigned
No exact matches.



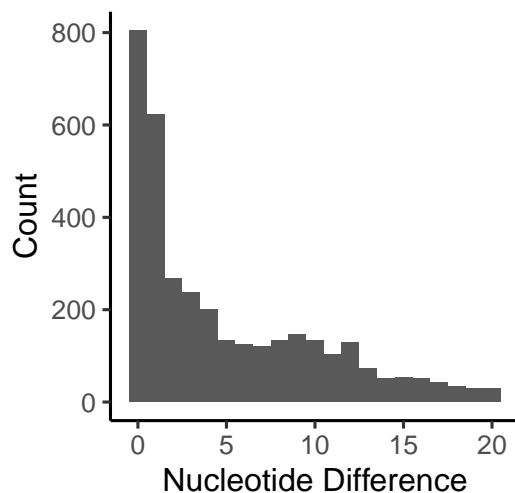
IGHV3–NL_19*01_S4096

2 sequences assigned
No exact matches.



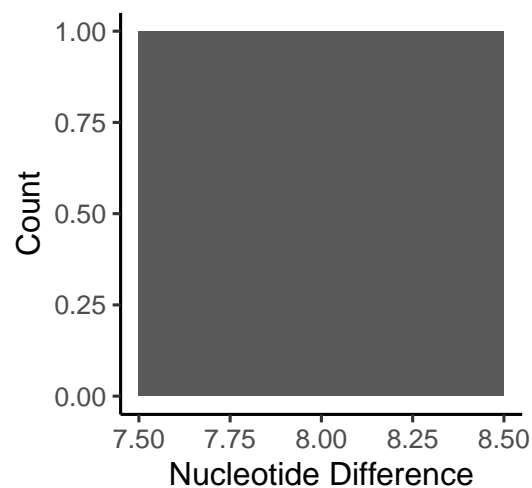
IGHV3–NL_5*01_S4429

3708 sequences assigned
805 (21.7%) exact matches, in which:
561 unique CDR3
8 unique J



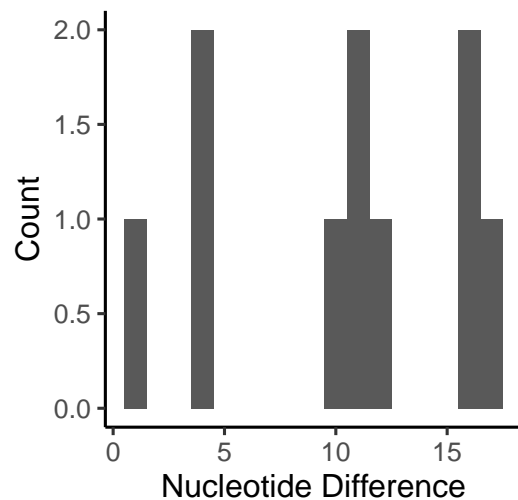
IGHV4–67*02_S1312

2 sequences assigned
No exact matches.



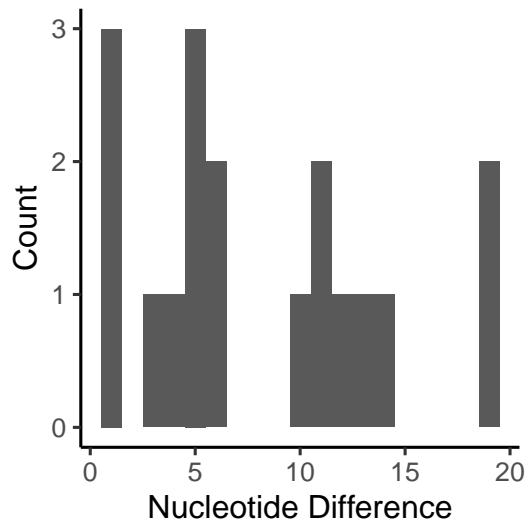
IGHV4-67*02_S6848

12 sequences assigned
No exact matches.



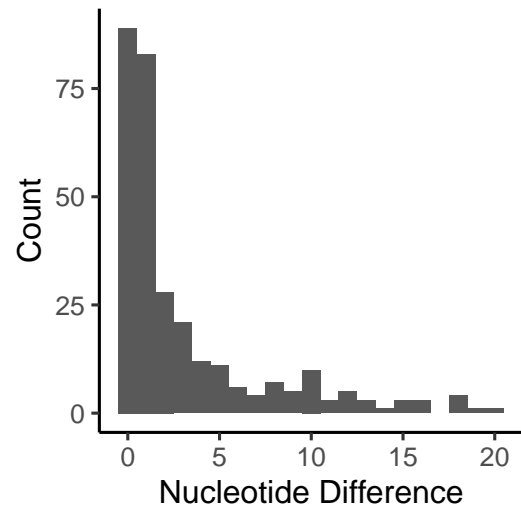
IGHV4-93*01_S5203

22 sequences assigned
No exact matches.



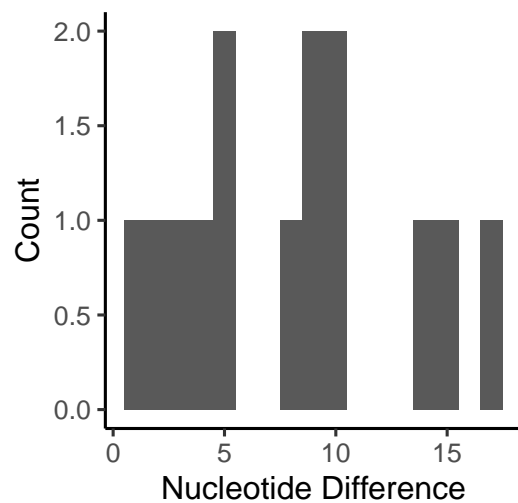
IGHV4-144*01_S0298

307 sequences assigned
89 (29%) exact matches, in which:
79 unique CDR3
7 unique J



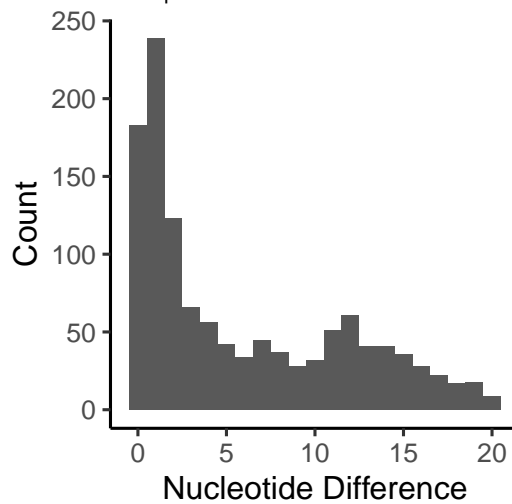
IGHV4-72*01_S8261

17 sequences assigned
No exact matches.



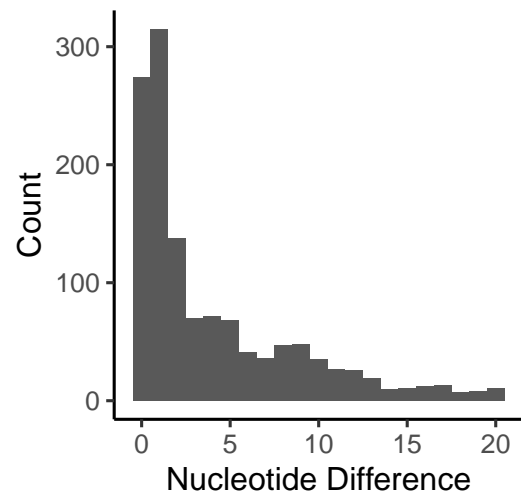
IGHV4-117*01_S2181

1293 sequences assigned
183 (14.2%) exact matches, in which:
172 unique CDR3
7 unique J



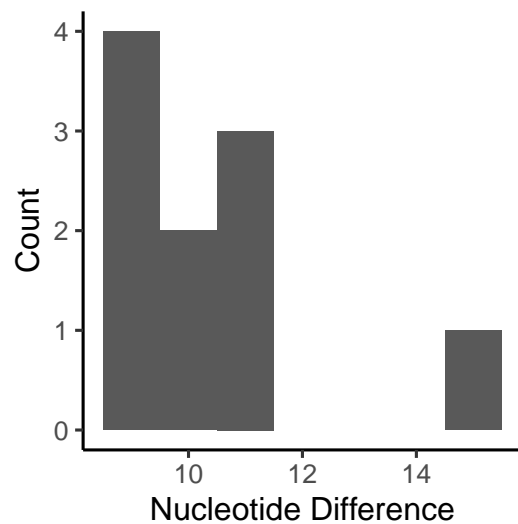
IGHV4-144*01_S6192

1337 sequences assigned
274 (20.5%) exact matches, in which:
245 unique CDR3
7 unique J



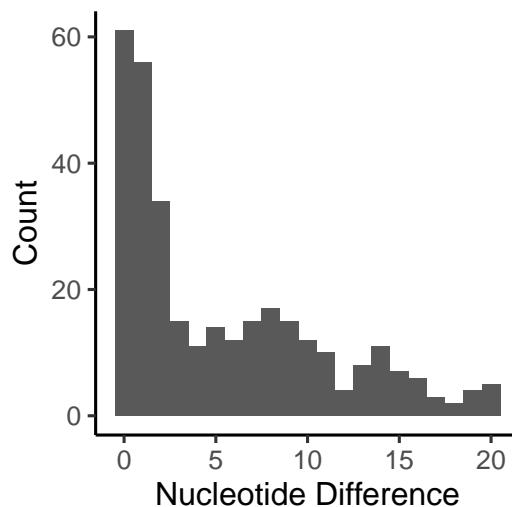
IGHV4-93*01_S0054

12 sequences assigned
No exact matches.



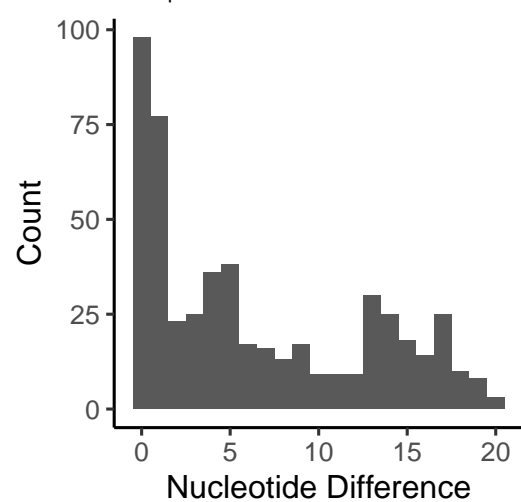
IGHV4-117*01_S6852

340 sequences assigned
61 (17.9%) exact matches, in which:
55 unique CDR3
7 unique J



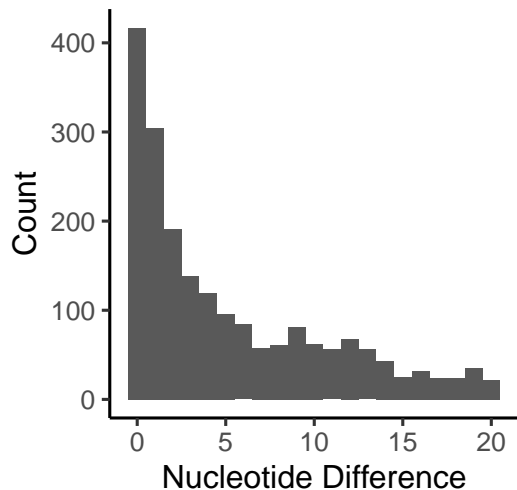
IGHV4-149*01_S2186

558 sequences assigned
98 (17.6%) exact matches, in which:
89 unique CDR3
9 unique J



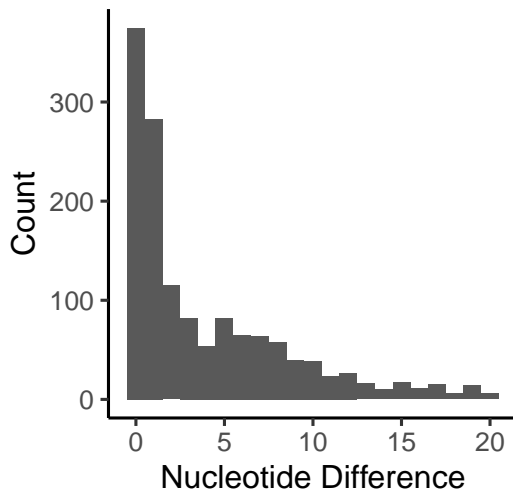
IGHV4-149*01_S4098

2161 sequences assigned
417 (19.3%) exact matches, in which:
362 unique CDR3
7 unique J



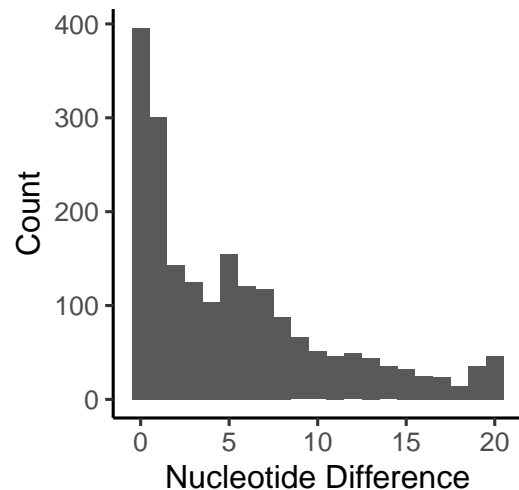
IGHV4-174*02_S7573

1472 sequences assigned
375 (25.5%) exact matches, in which:
338 unique CDR3
8 unique J



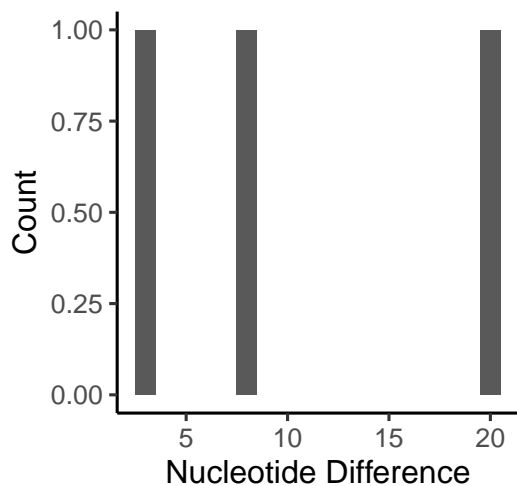
IGHV4-NL_1*01_S9616

2180 sequences assigned
396 (18.2%) exact matches, in which:
349 unique CDR3
7 unique J



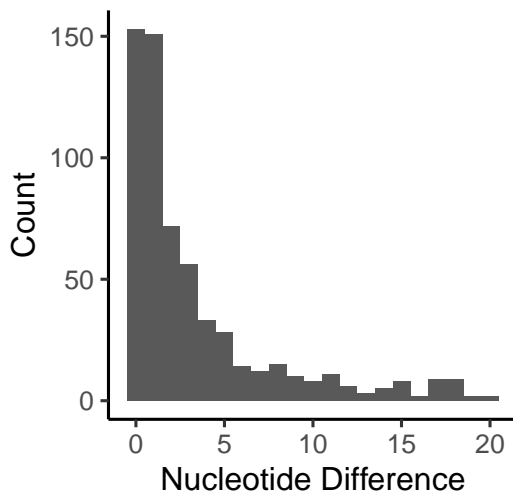
IGHV4-150*01_S0971

3 sequences assigned
No exact matches.



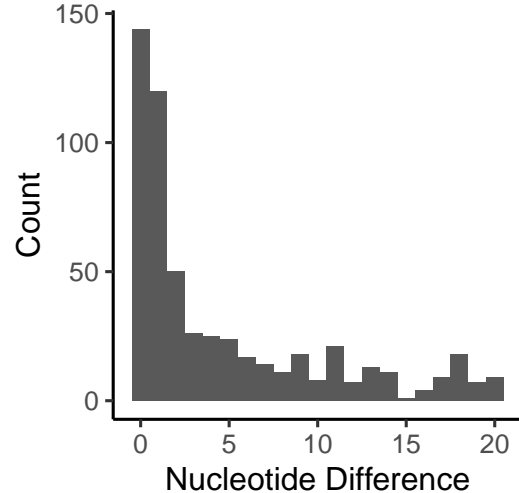
IGHV4-NL_1*01_S5641

626 sequences assigned
153 (24.4%) exact matches, in which:
144 unique CDR3
7 unique J



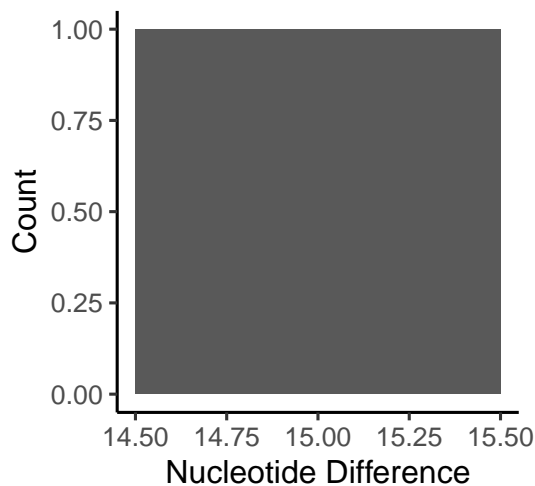
IGHV4-NL_1*02_S7536

580 sequences assigned
144 (24.8%) exact matches, in which:
123 unique CDR3
7 unique J



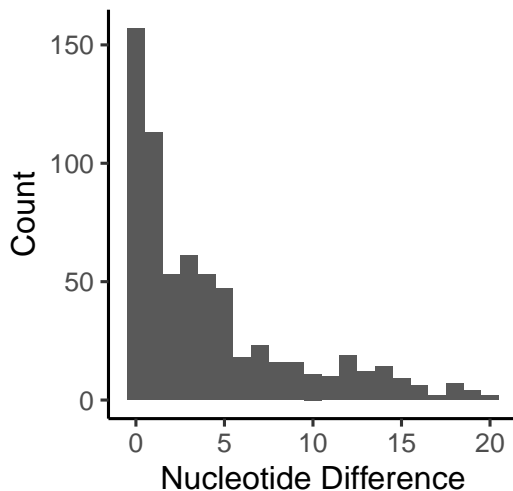
IGHV4-150*01_S1575

2 sequences assigned
No exact matches.



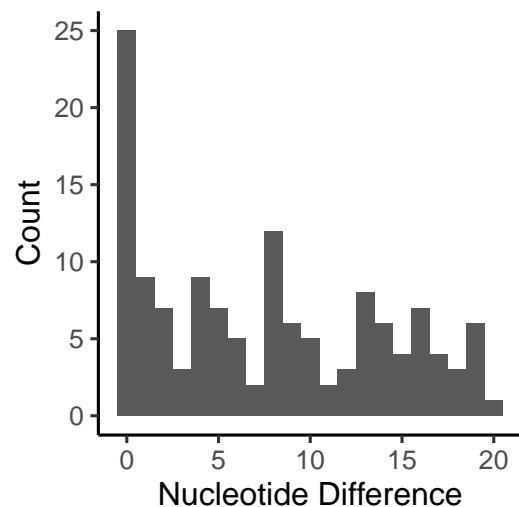
IGHV4-NL_1*01_S8621

725 sequences assigned
157 (21.7%) exact matches, in which:
140 unique CDR3
6 unique J



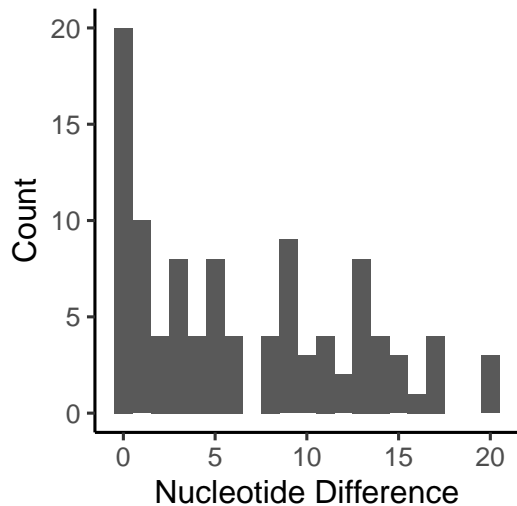
IGHV4-NL_10*01_S4164

162 sequences assigned
25 (15.4%) exact matches, in which:
24 unique CDR3
5 unique J



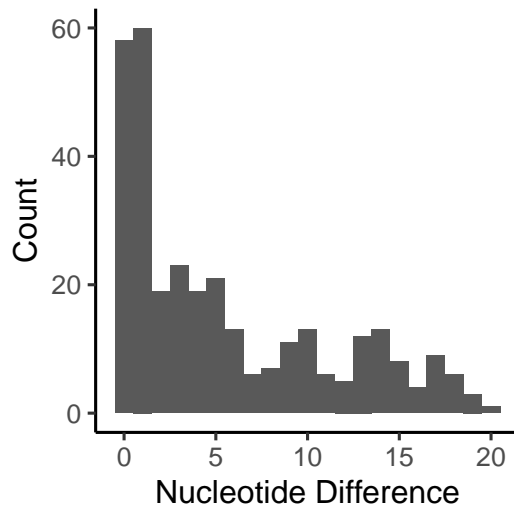
IGHV4–NL_10*01_S4164_

127 sequences assigned
20 (15.7%) exact matches, in which:
20 unique CDR3
5 unique J



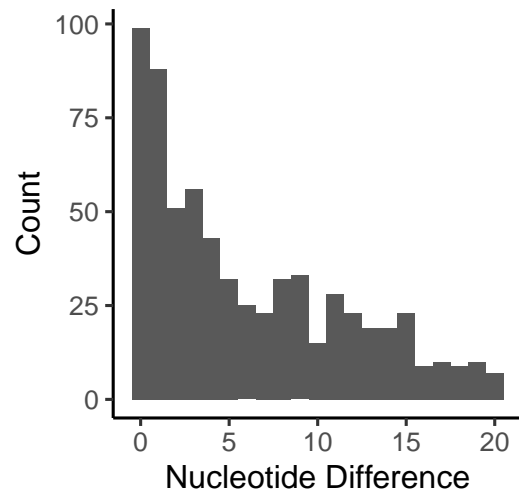
IGHV4–NL_12*01_S6471

324 sequences assigned
58 (17.9%) exact matches, in which:
52 unique CDR3
5 unique J



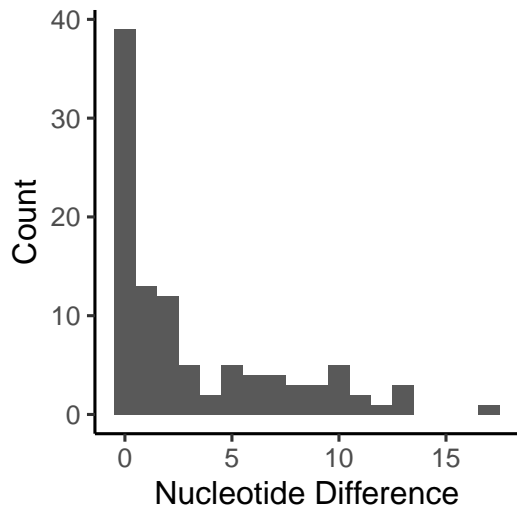
IGHV4–NL_16*01_S2458

685 sequences assigned
99 (14.5%) exact matches, in which:
92 unique CDR3
6 unique J



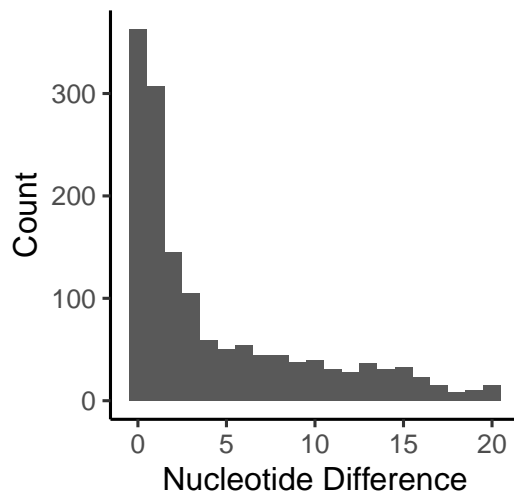
IGHV4–NL_10*01_S4826

103 sequences assigned
39 (37.9%) exact matches, in which:
36 unique CDR3
5 unique J



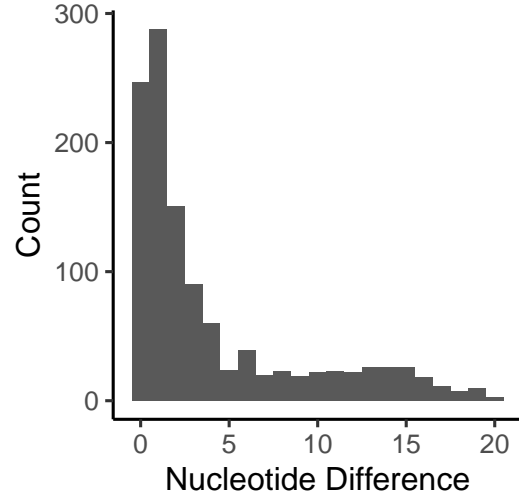
IGHV4–NL_13*01_S9273

1536 sequences assigned
363 (23.6%) exact matches, in which:
337 unique CDR3
8 unique J



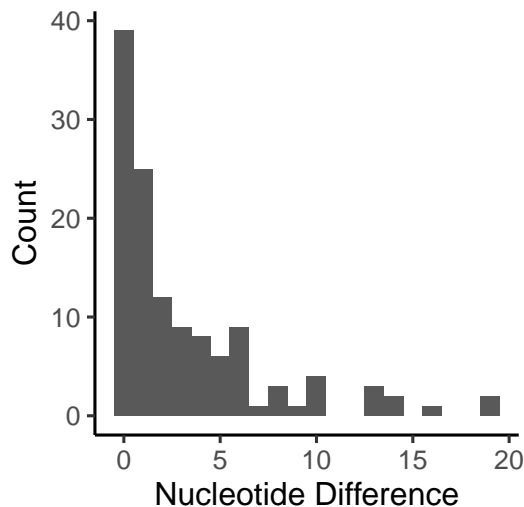
IGHV4–NL_17*01_S6249

1216 sequences assigned
247 (20.3%) exact matches, in which:
225 unique CDR3
7 unique J



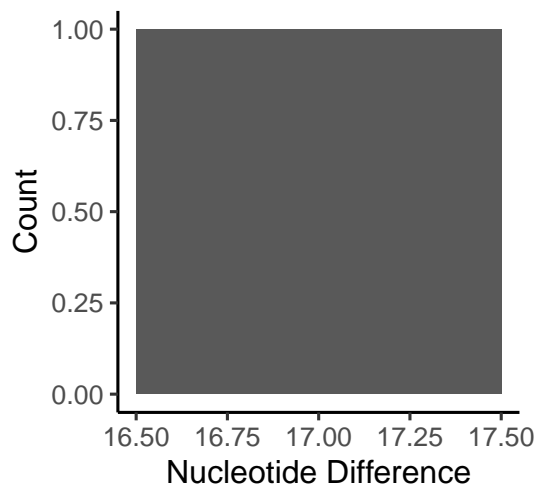
IGHV4–NL_10*01_S4826_

126 sequences assigned
39 (31%) exact matches, in which:
38 unique CDR3
6 unique J



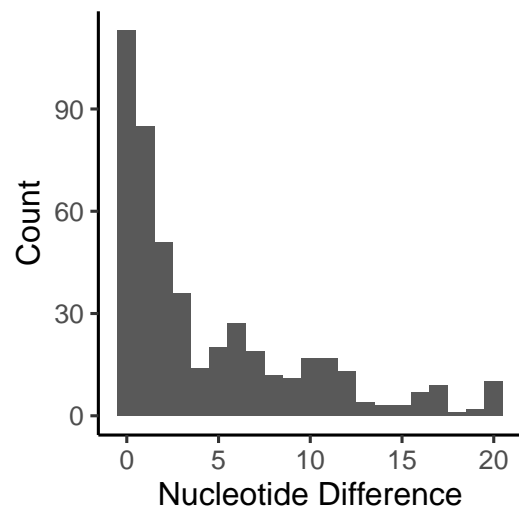
IGHV4–NL_14*01_S3056

1 sequences assigned
No exact matches.



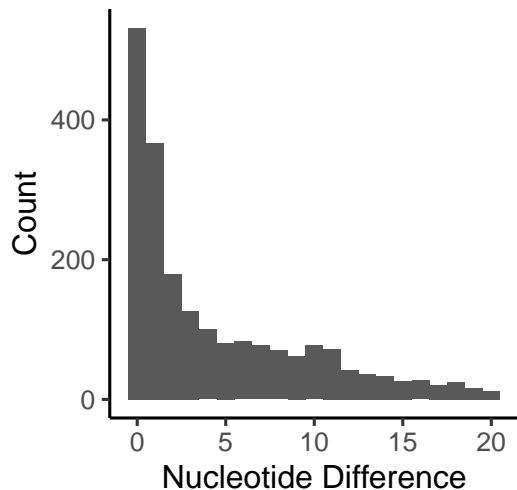
IGHV4–NL_17*01_S6933

501 sequences assigned
113 (22.6%) exact matches, in which:
99 unique CDR3
6 unique J



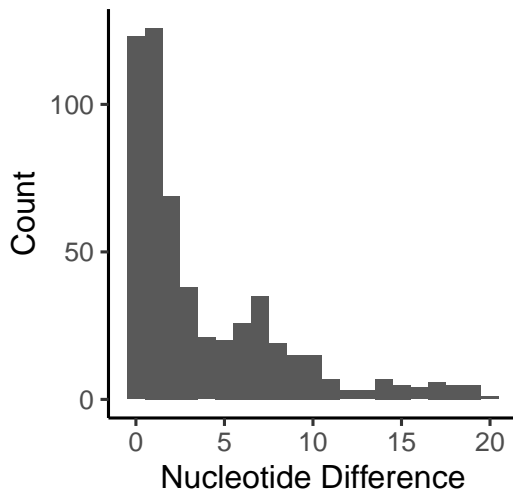
IGHV4–NL_18*01_S3907

2127 sequences assigned
532 (25%) exact matches, in which:
462 unique CDR3
8 unique J



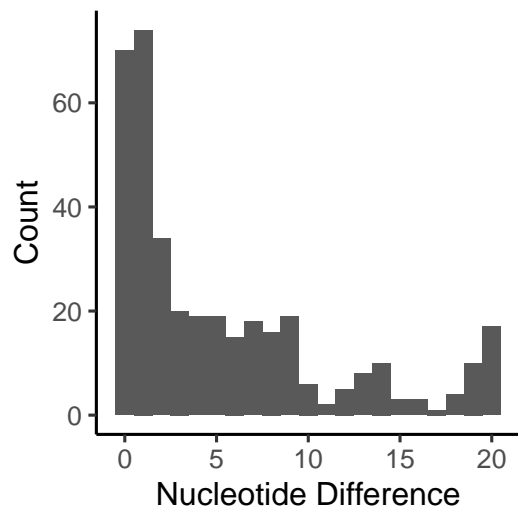
IGHV4–NL_22*01_S2393

577 sequences assigned
123 (21.3%) exact matches, in which:
107 unique CDR3
7 unique J



IGHV4–NL_25*01_S1514

420 sequences assigned
70 (16.7%) exact matches, in which:
67 unique CDR3
5 unique J



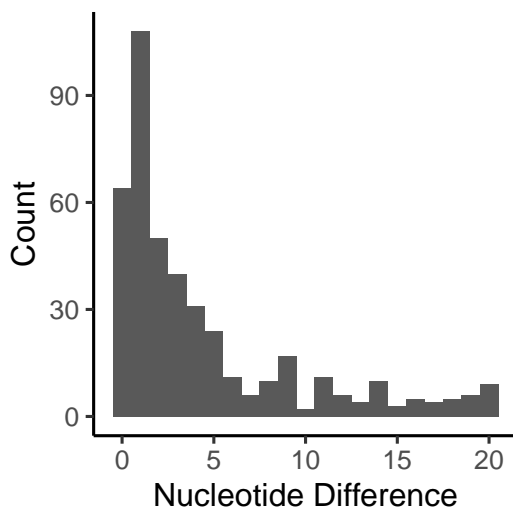
IGHV4–NL_19*01_S4449

1 sequences assigned
No exact matches.



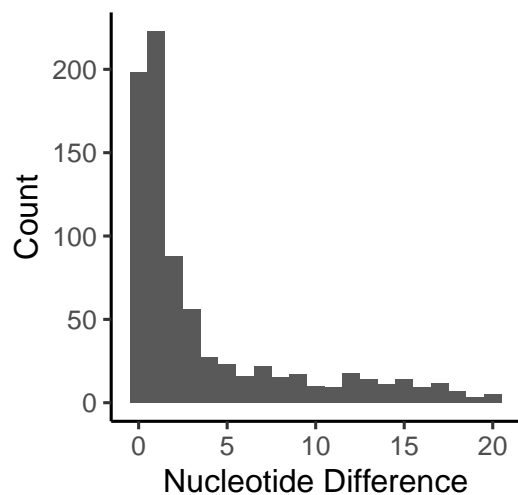
IGHV4–NL_22*01_S4706

453 sequences assigned
64 (14.1%) exact matches, in which:
61 unique CDR3
5 unique J



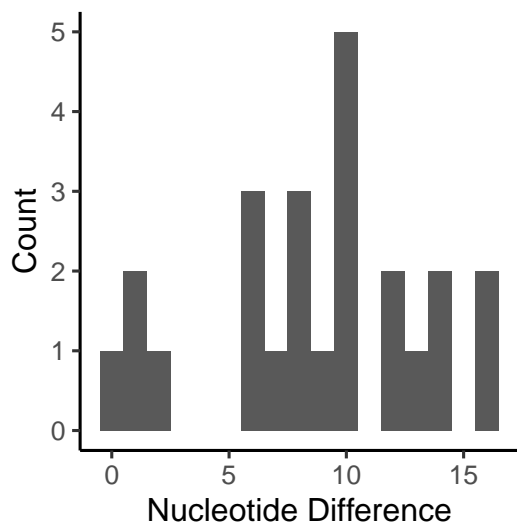
IGHV4–NL_27*01_S0482

834 sequences assigned
198 (23.7%) exact matches, in which:
177 unique CDR3
7 unique J



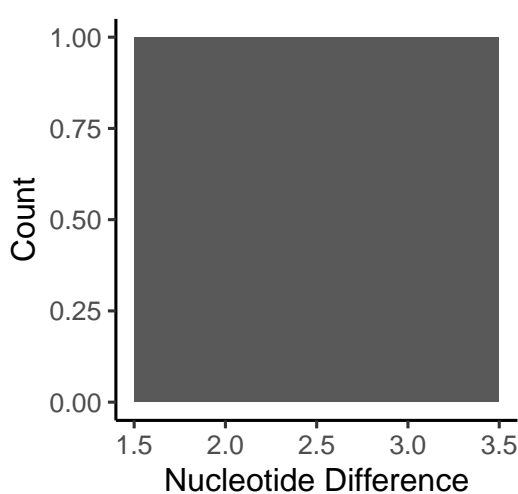
IGHV4–NL_21*01_S0138

26 sequences assigned
1 (3.8%) exact matches, in which:
1 unique CDR3
1 unique J



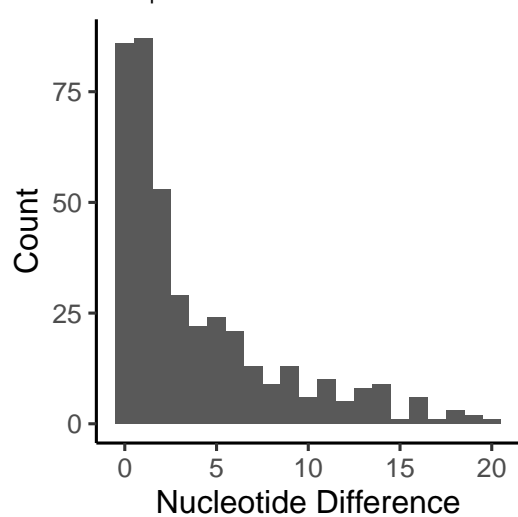
IGHV4–NL_24*01_S5697

2 sequences assigned
No exact matches.



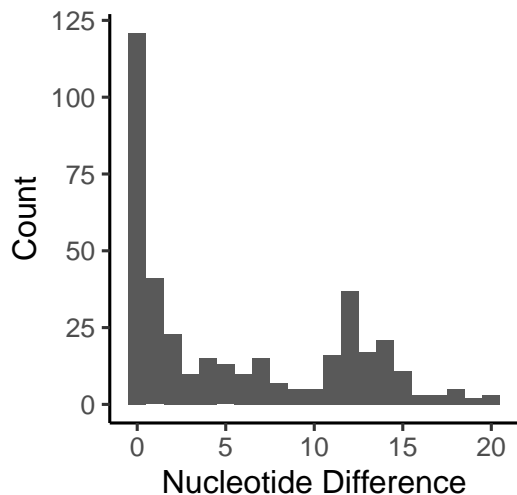
IGHV4–NL_27*01_S1515

421 sequences assigned
86 (20.4%) exact matches, in which:
76 unique CDR3
8 unique J



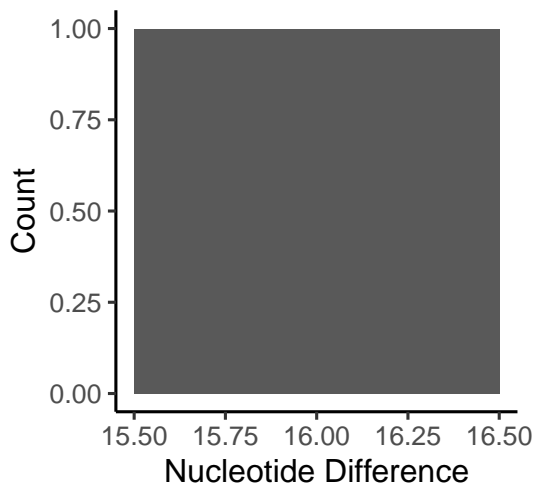
IGHV4–NL_30*01_S1240

388 sequences assigned
121 (31.2%) exact matches, in which:
115 unique CDR3
7 unique J



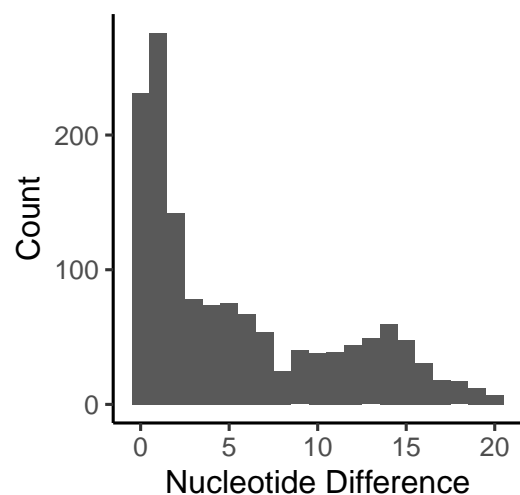
IGHV4–NL_32*01_S0782

1 sequences assigned
No exact matches.



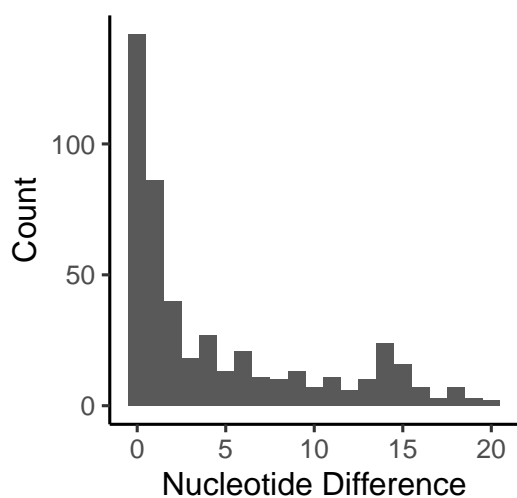
IGHV4–NL_33*01_S9333

1609 sequences assigned
231 (14.4%) exact matches, in which:
212 unique CDR3
8 unique J



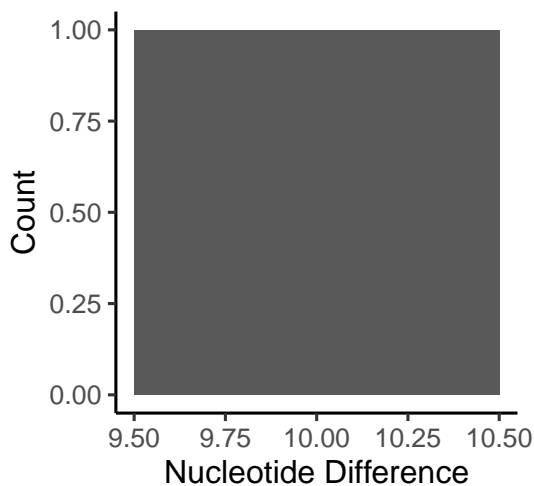
IGHV4–NL_30*01_S1240

491 sequences assigned
142 (28.9%) exact matches, in which:
134 unique CDR3
7 unique J



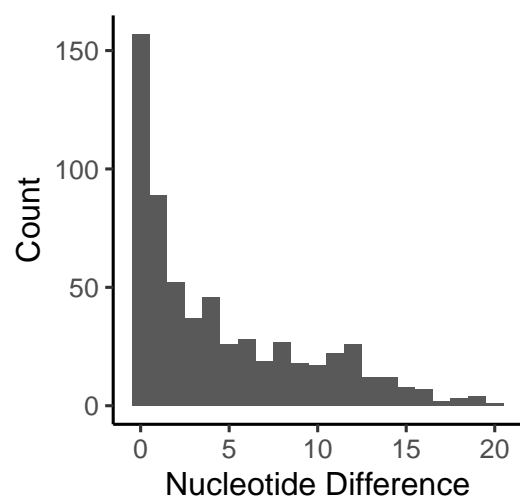
IGHV4–NL_32*01_S1450

1 sequences assigned
No exact matches.



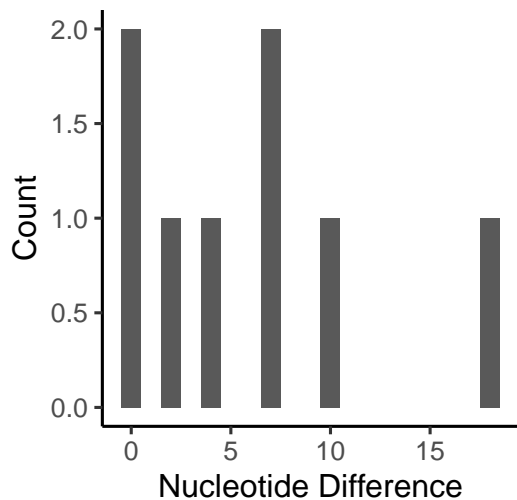
IGHV4–NL_36*01_S1694

624 sequences assigned
157 (25.2%) exact matches, in which:
143 unique CDR3
7 unique J



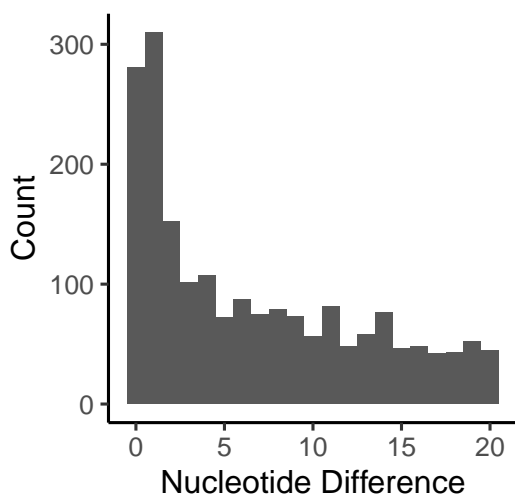
IGHV4–NL_31*01_S7693

8 sequences assigned
2 (25%) exact matches, in which:
2 unique CDR3
1 unique J



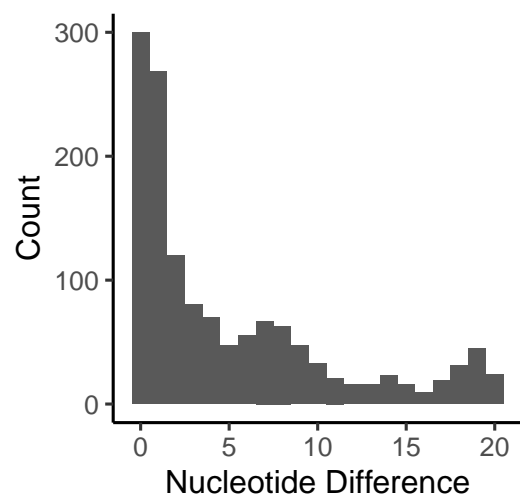
IGHV4–NL_33*01_S9199

2155 sequences assigned
281 (13%) exact matches, in which:
261 unique CDR3
7 unique J



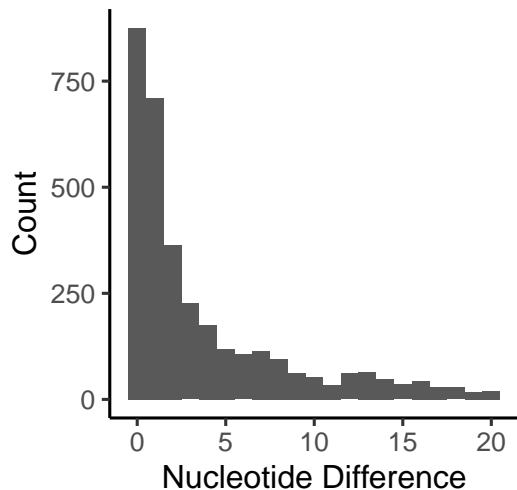
IGHV4–NL_37*01_S0071

1513 sequences assigned
300 (19.8%) exact matches, in which:
268 unique CDR3
6 unique J



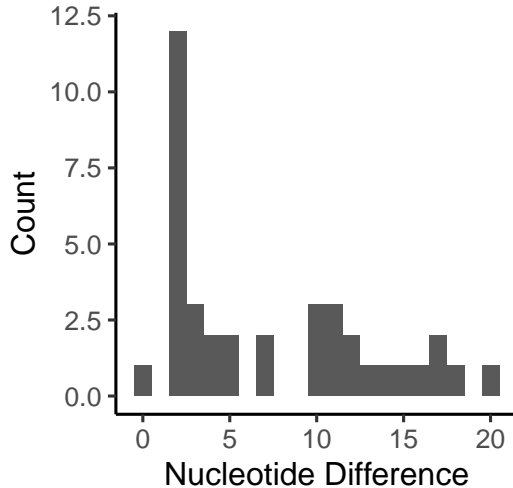
IGHV4–NL_37*01_S0997

3357 sequences assigned
876 (26.1%) exact matches, in which:
780 unique CDR3
6 unique J



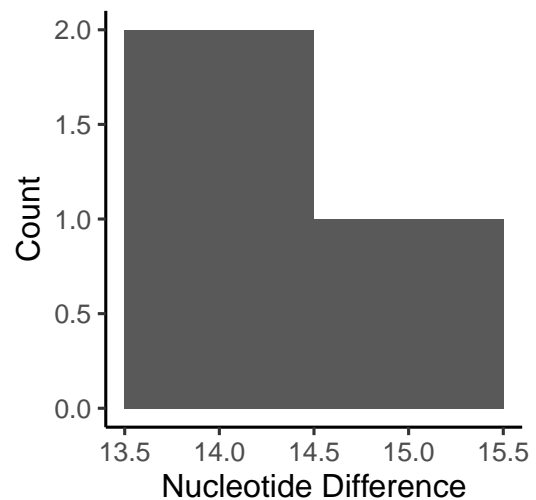
IGHV4–NL_40*01_S9020

40 sequences assigned
1 (2.5%) exact matches, in which:
1 unique CDR3
1 unique J



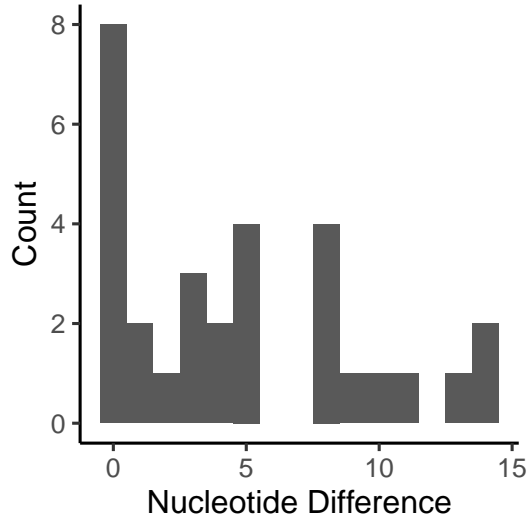
IGHV4–NL_43*01_S3820

3 sequences assigned
No exact matches.



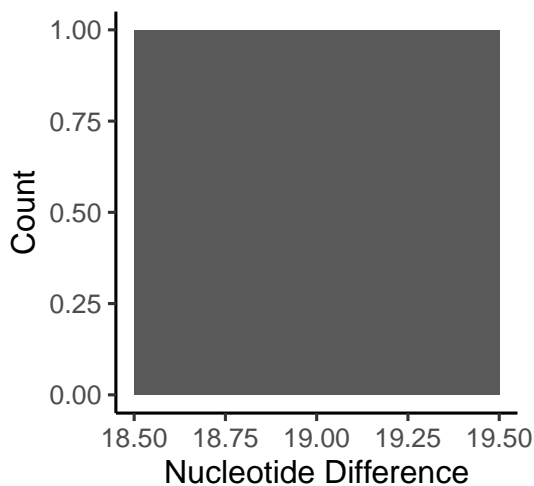
IGHV4–NL_38*01_S8437

34 sequences assigned
8 (23.5%) exact matches, in which:
8 unique CDR3
2 unique J



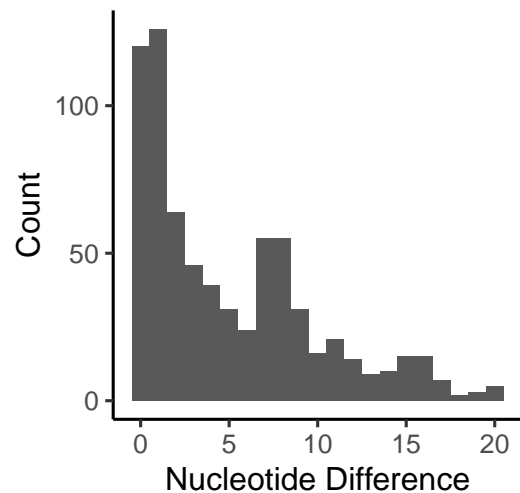
IGHV4–NL_41*01_S6920

1 sequences assigned
No exact matches.



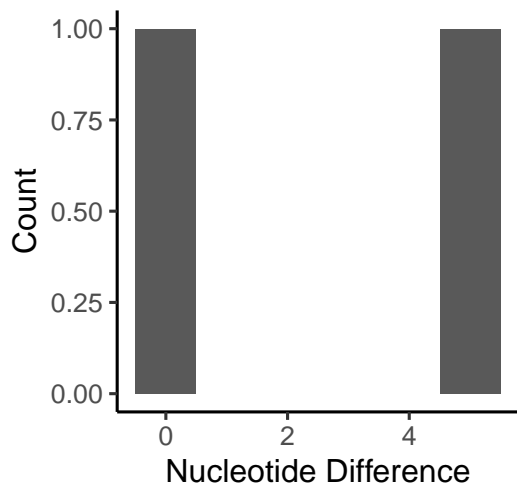
IGHV4–NL_5*01_S0908

738 sequences assigned
120 (16.3%) exact matches, in which:
107 unique CDR3
7 unique J



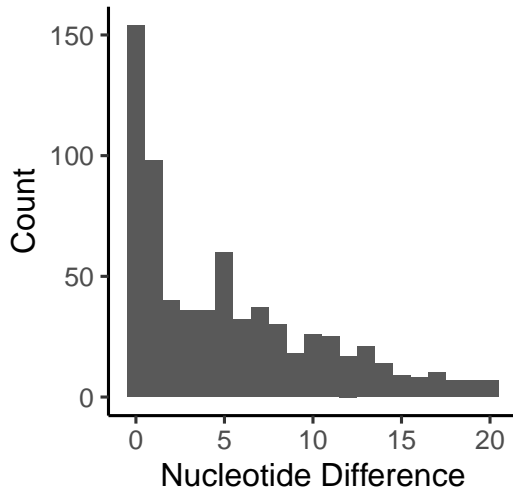
IGHV4–NL_4*01_S8866

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



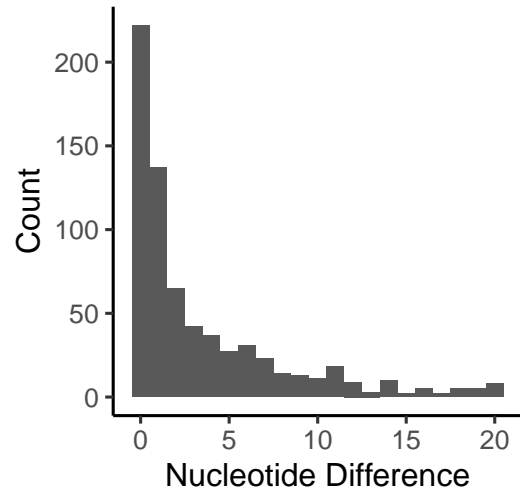
IGHV4–NL_42*01_S8550

710 sequences assigned
154 (21.7%) exact matches, in which:
141 unique CDR3
8 unique J



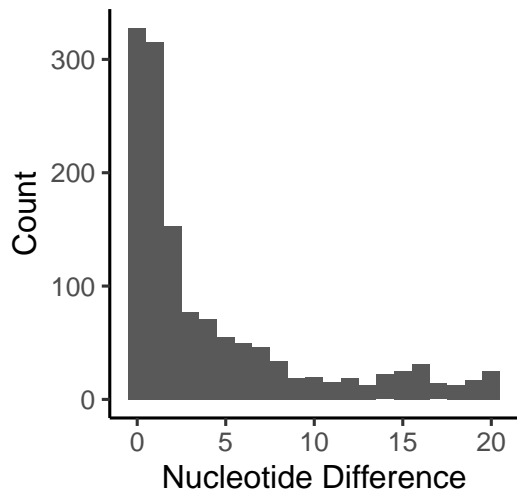
IGHV4–NL_5*01_S6337

731 sequences assigned
222 (30.4%) exact matches, in which:
206 unique CDR3
5 unique J



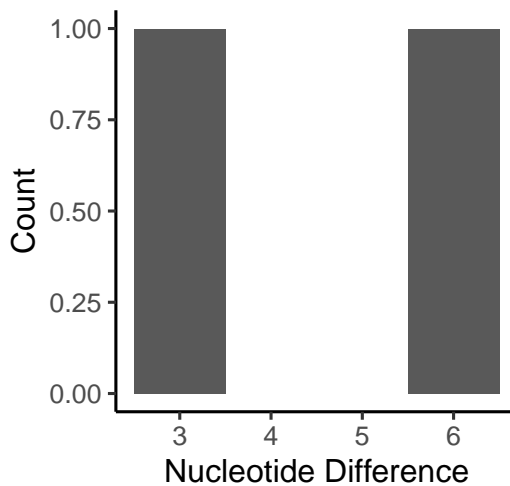
IGHV4–NL_5*01_S6960

1434 sequences assigned
328 (22.9%) exact matches, in which:
305 unique CDR3
7 unique J



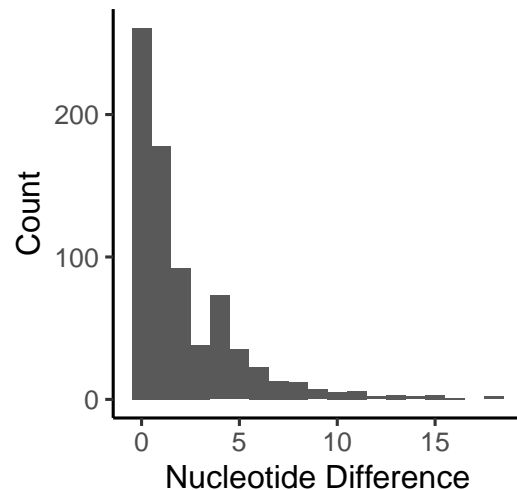
IGHV4–NL_9*01_S6608

2 sequences assigned
No exact matches.



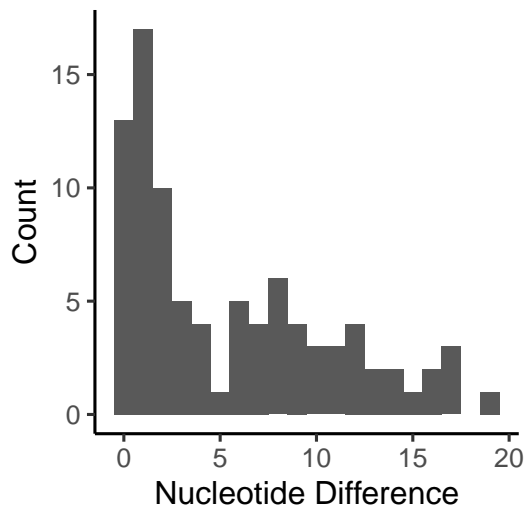
IGHV5–157*01_S4351

758 sequences assigned
261 (34.4%) exact matches, in which:
150 unique CDR3
7 unique J



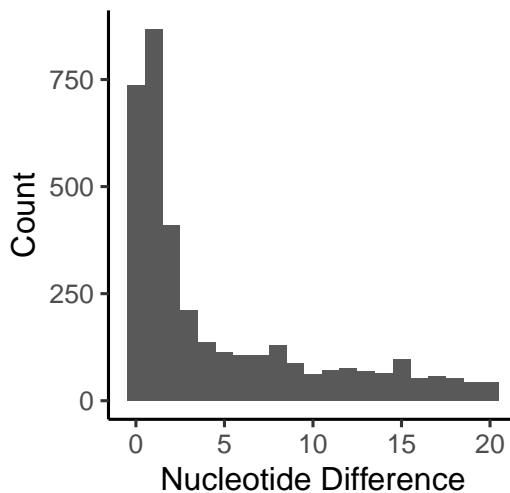
IGHV4–NL_6*01_S3002

92 sequences assigned
13 (14.1%) exact matches, in which:
12 unique CDR3
4 unique J



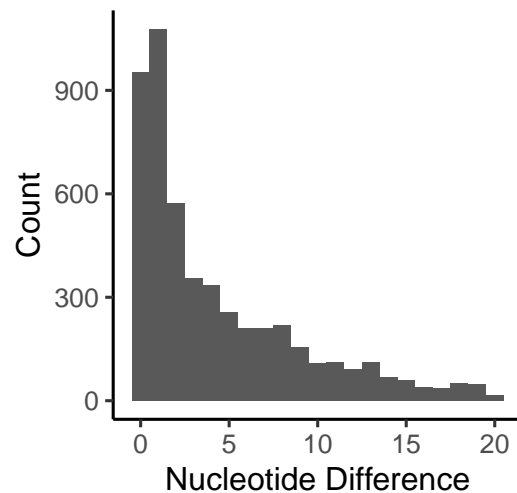
IGHV5–15*01_S0175

3689 sequences assigned
737 (20%) exact matches, in which:
587 unique CDR3
9 unique J



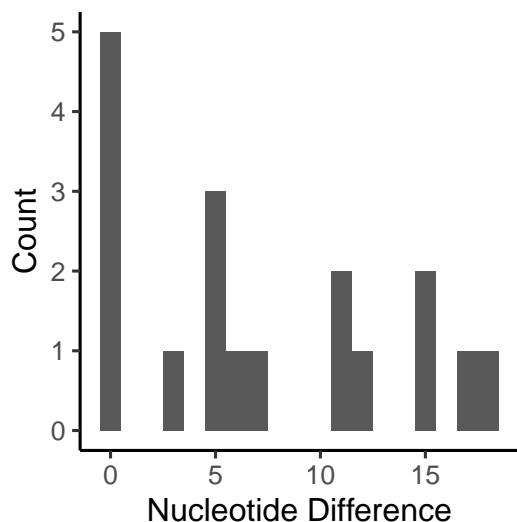
IGHV5–157*02_S3096

5156 sequences assigned
954 (18.5%) exact matches, in which:
679 unique CDR3
10 unique J



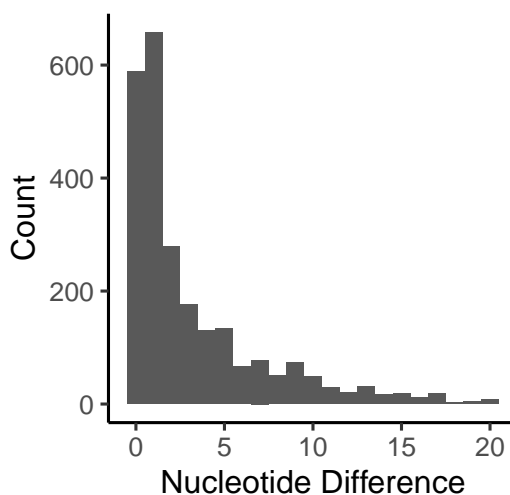
IGHV4–NL_7*02_S0143

19 sequences assigned
5 (26.3%) exact matches, in which:
5 unique CDR3
4 unique J



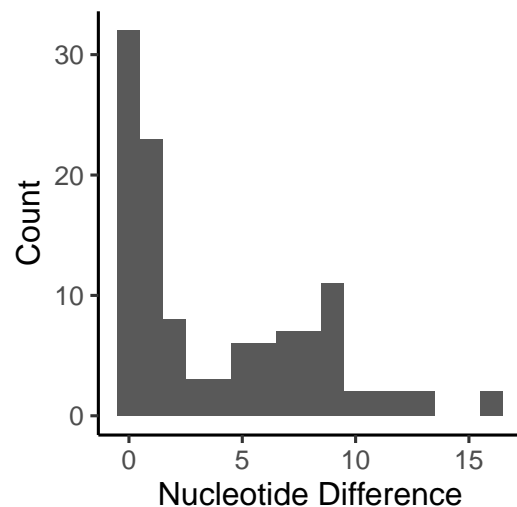
IGHV5–15*01_S8661

2471 sequences assigned
589 (23.8%) exact matches, in which:
471 unique CDR3
7 unique J



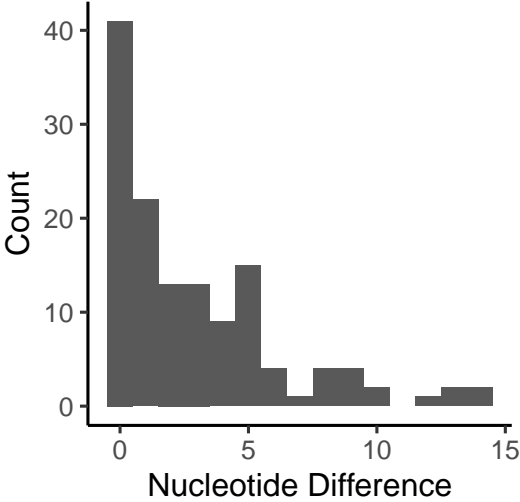
IGHV6–1*02_G283T

178 sequences assigned
32 (18%) exact matches, in which:
30 unique CDR3
5 unique J



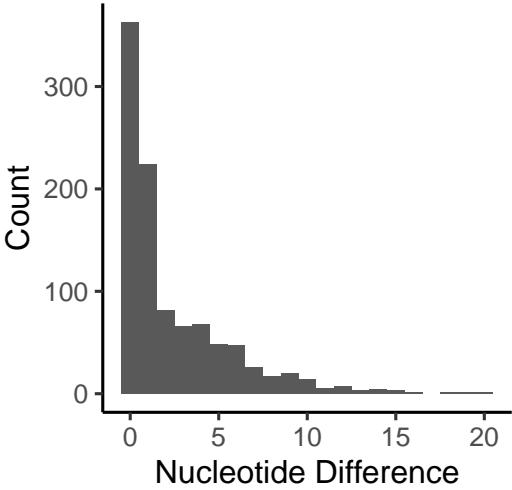
IGHV6-1*02_S6792

134 sequences assigned
41 (30.6%) exact matches, in which:
26 unique CDR3
4 unique J



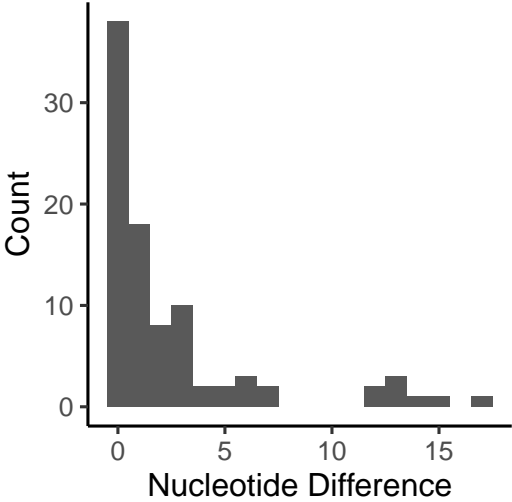
IGHV7-86*01_S5062

1013 sequences assigned
363 (35.8%) exact matches, in which:
267 unique CDR3
8 unique J

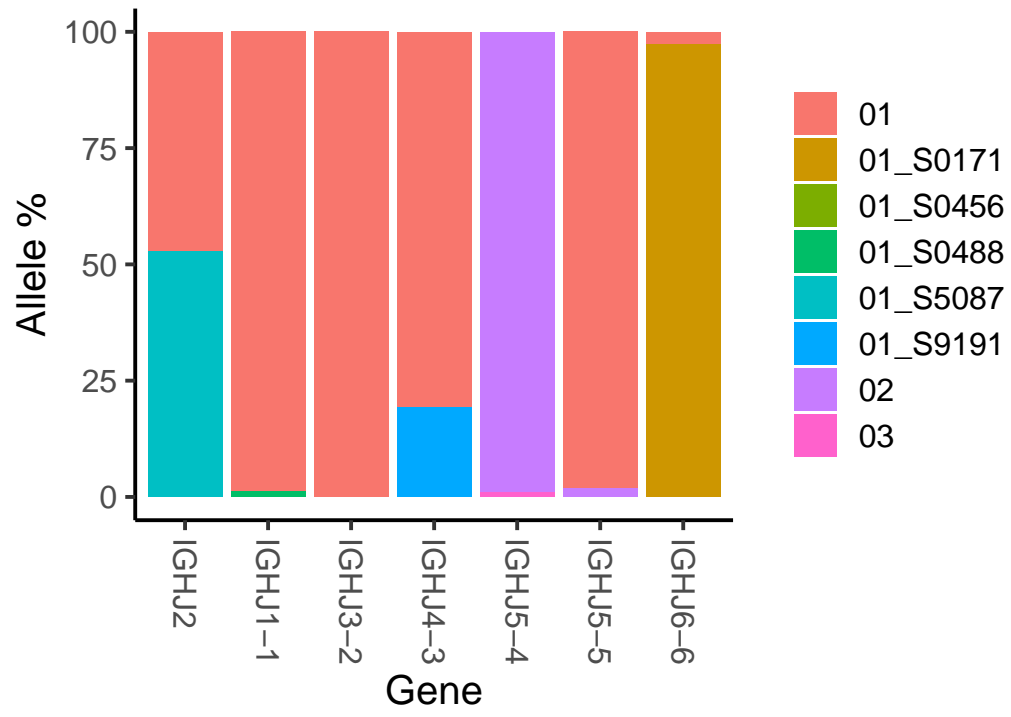


IGHV7-135*01_S9086

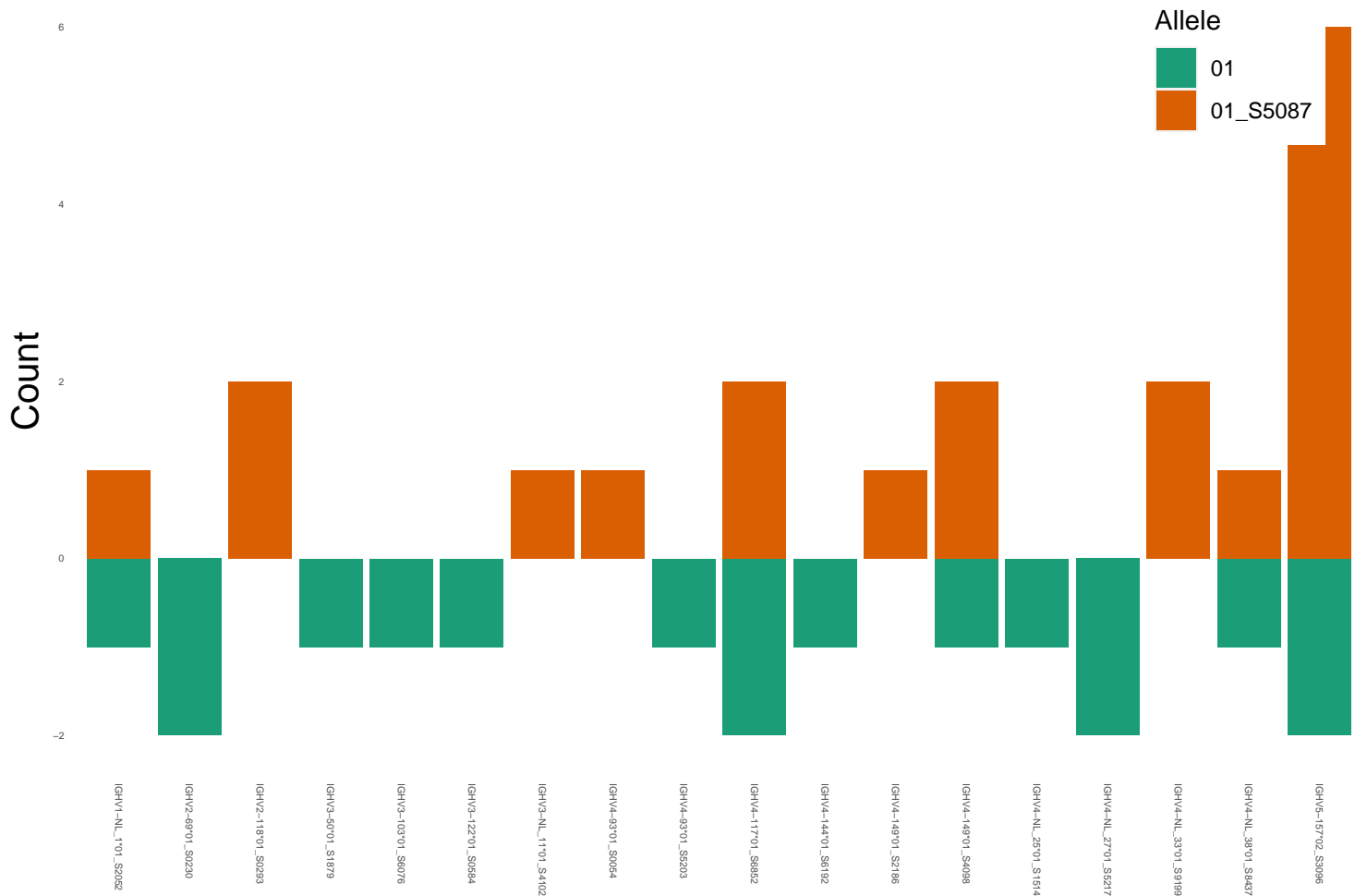
91 sequences assigned
38 (41.8%) exact matches, in which:
25 unique CDR3
5 unique J



Allele Usage



Sequence Count by IGHJ2 allele usage



Warning – no inferred sequences found.