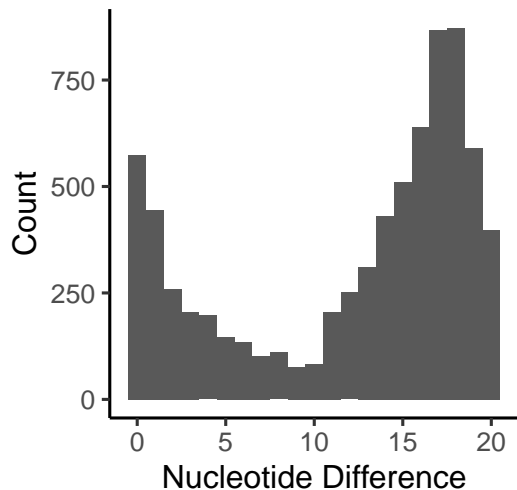


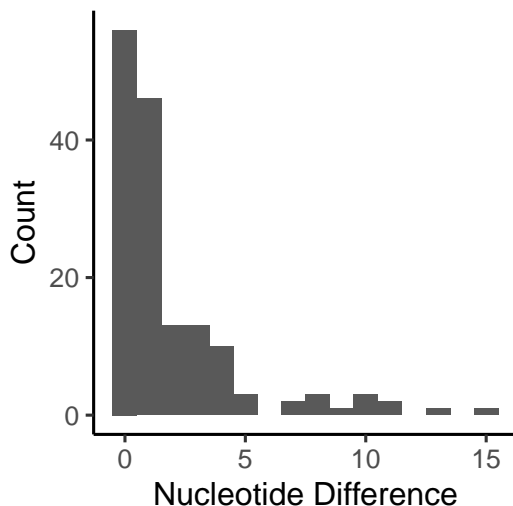
IGHV1-60*01_S7772

8388 sequences assigned
574 (6.8%) exact matches, in which:
387 unique CDR3
7 unique J



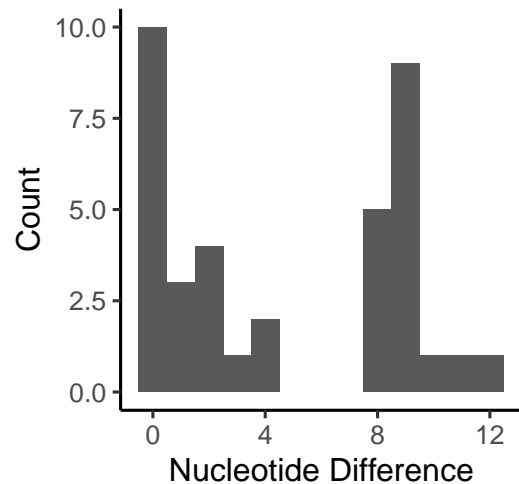
IGHV1-138*01_S0851

154 sequences assigned
56 (36.4%) exact matches, in which:
47 unique CDR3
6 unique J



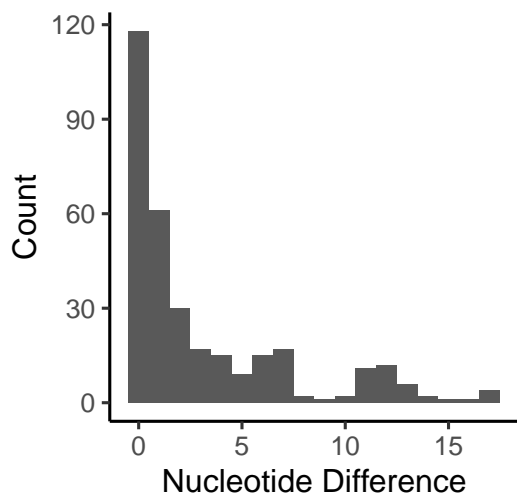
IGHV1-170*01_S3055

37 sequences assigned
10 (27%) exact matches, in which:
6 unique CDR3
3 unique J



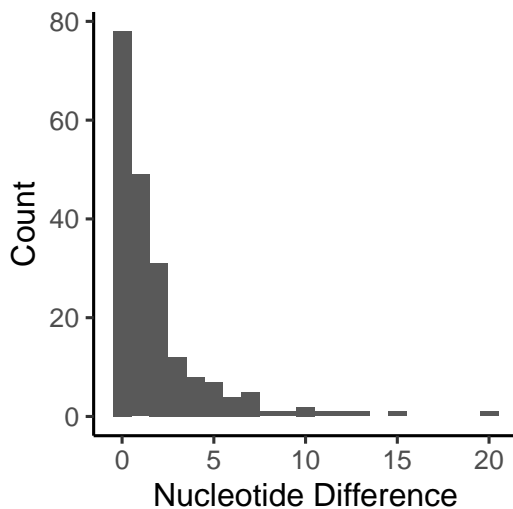
IGHV1-84*01_S2078

325 sequences assigned
118 (36.3%) exact matches, in which:
79 unique CDR3
6 unique J



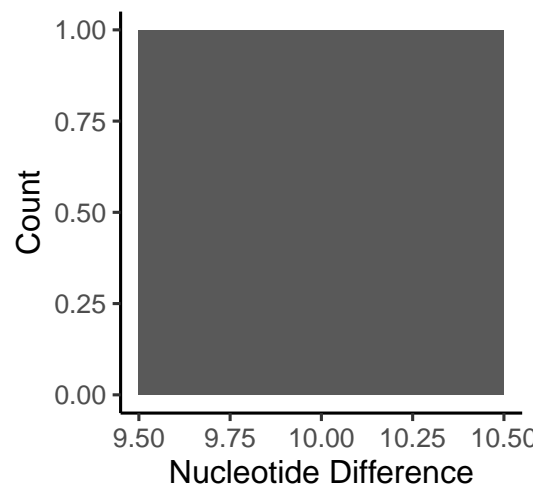
IGHV1-138*01_S2054

204 sequences assigned
78 (38.2%) exact matches, in which:
68 unique CDR3
6 unique J



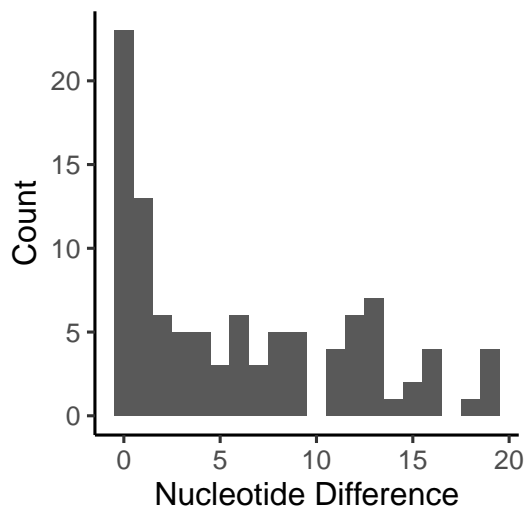
IGHV1-NL_1*01_S5433

1 sequences assigned
No exact matches.



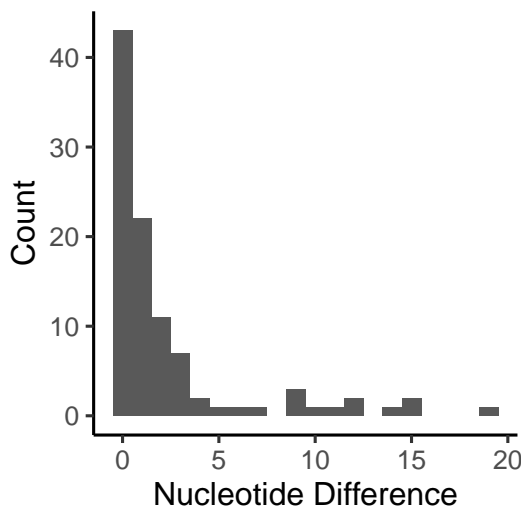
IGHV1-124*01_S6748

106 sequences assigned
23 (21.7%) exact matches, in which:
16 unique CDR3
4 unique J



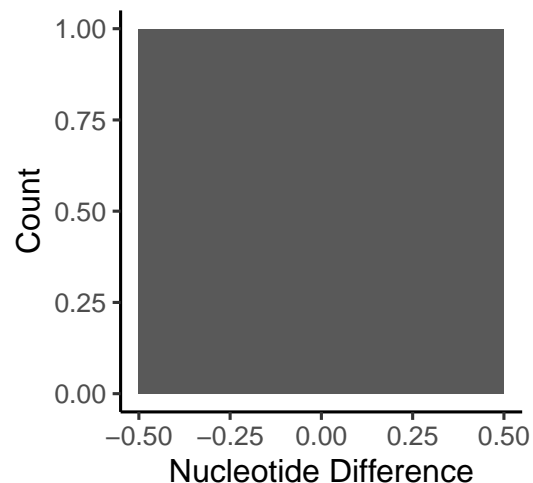
IGHV1-138*01_S6073

99 sequences assigned
43 (43.4%) exact matches, in which:
43 unique CDR3
6 unique J



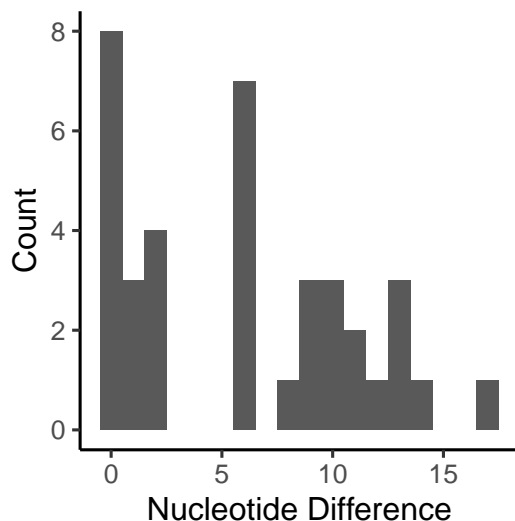
IGHV1-NL_1*01_S8523

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



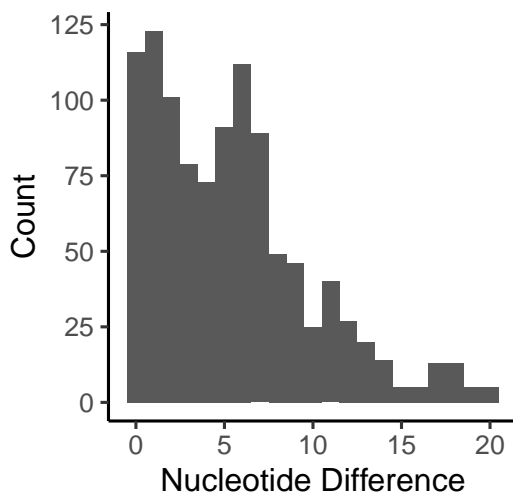
IGHV1–NL_2*01_S2245

38 sequences assigned
8 (21.1%) exact matches, in which:
6 unique CDR3
4 unique J



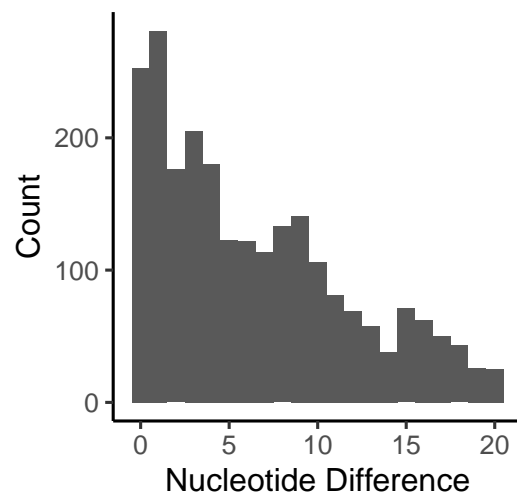
IGHV2–7*02_S4285

1066 sequences assigned
116 (10.9%) exact matches, in which:
84 unique CDR3
7 unique J



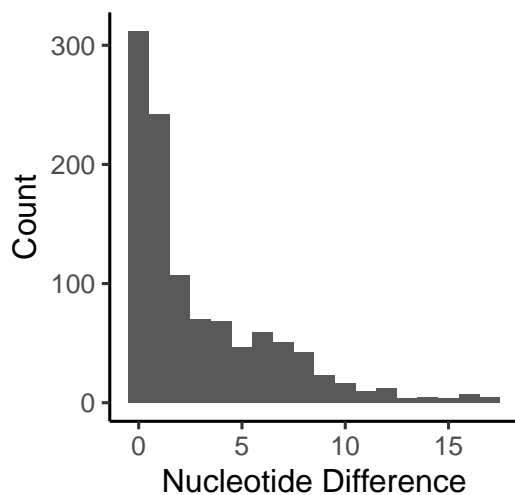
IGHV2–69*01_S0230

2582 sequences assigned
253 (9.8%) exact matches, in which:
169 unique CDR3
7 unique J



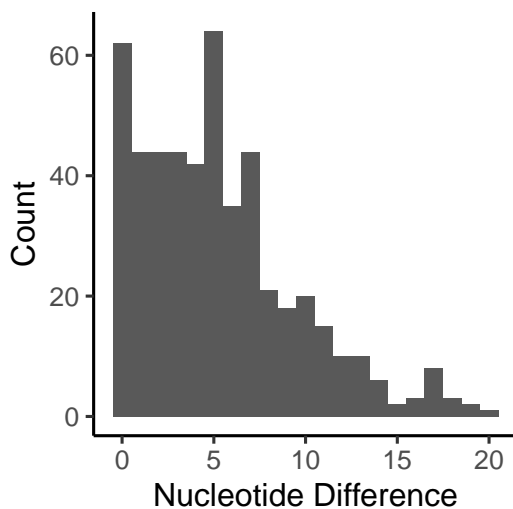
IGHV2–7*02_S3534

1088 sequences assigned
312 (28.7%) exact matches, in which:
221 unique CDR3
8 unique J



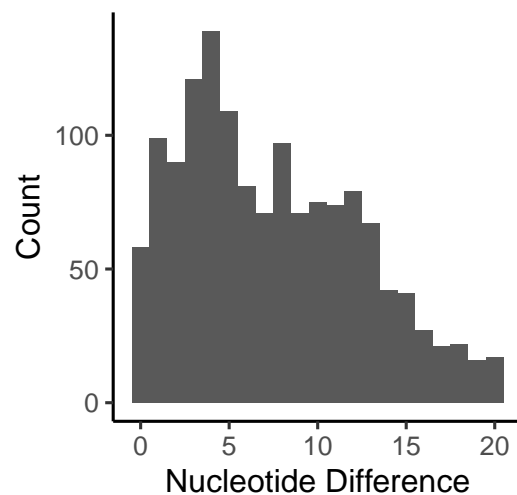
IGHV2–7*02_S4285_G292T_G294A

507 sequences assigned
62 (12.2%) exact matches, in which:
54 unique CDR3
6 unique J



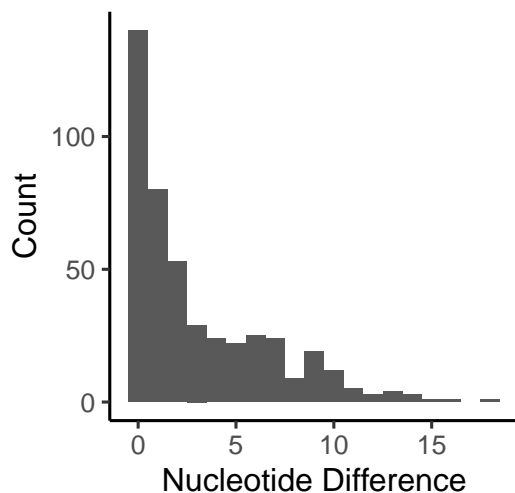
IGHV2–118*01_S0293

1577 sequences assigned
58 (3.7%) exact matches, in which:
35 unique CDR3
6 unique J



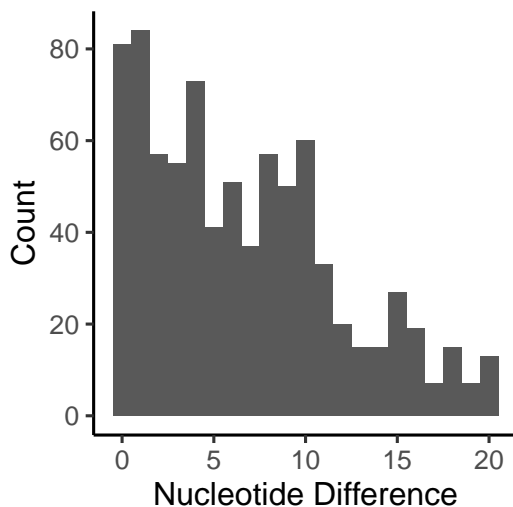
IGHV2–7*02_S3534_G292T_G294A

458 sequences assigned
140 (30.6%) exact matches, in which:
124 unique CDR3
6 unique J



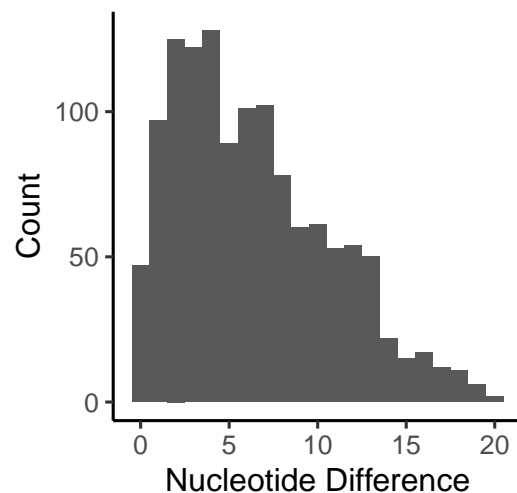
IGHV2–69*01_G292T_G294A

884 sequences assigned
81 (9.2%) exact matches, in which:
78 unique CDR3
6 unique J



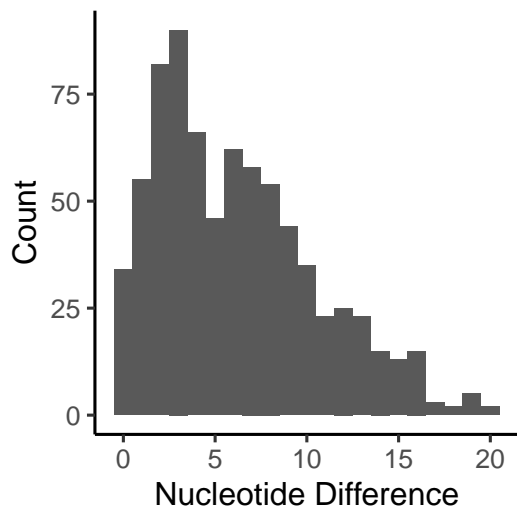
IGHV2–NL_1*01_S7542

1259 sequences assigned
47 (3.7%) exact matches, in which:
29 unique CDR3
5 unique J



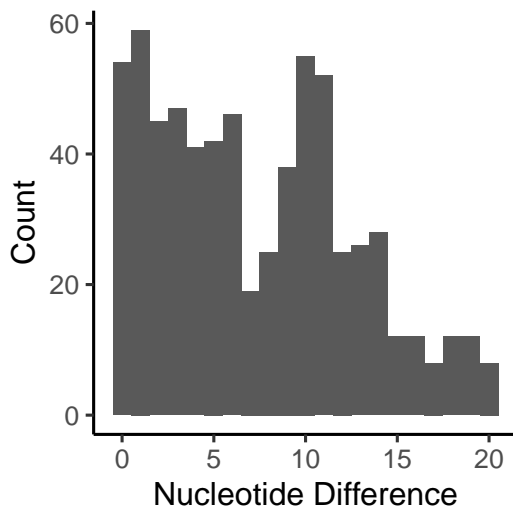
IGHV2–NL_1*01_S7542_C

764 sequences assigned
34 (4.5%) exact matches, in which:
29 unique CDR3
5 unique J



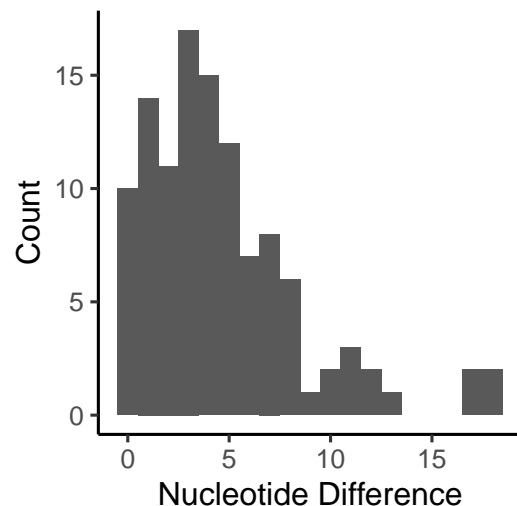
IGHV3–9*01_S0778

720 sequences assigned
54 (7.5%) exact matches, in which:
45 unique CDR3
5 unique J



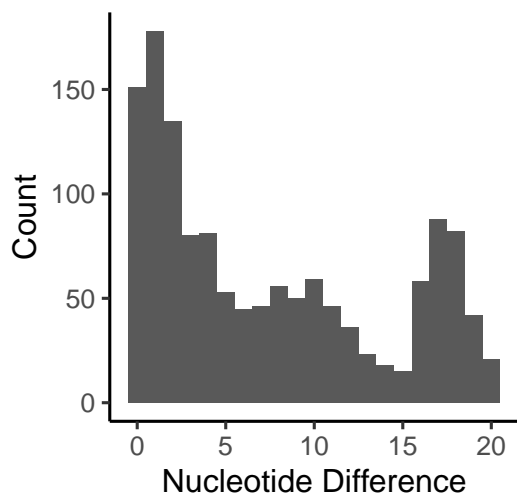
IGHV3–36*01_S1803

115 sequences assigned
10 (8.7%) exact matches, in which:
10 unique CDR3
4 unique J



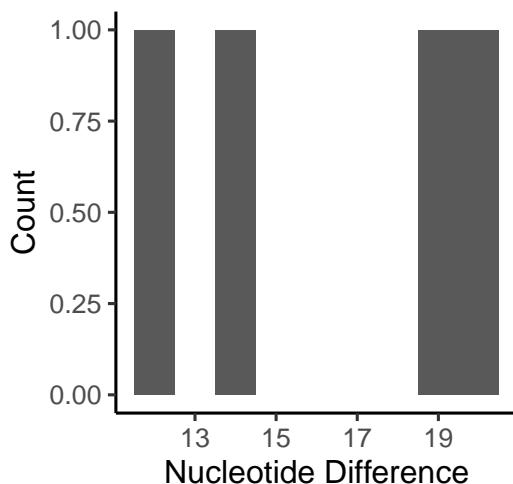
IGHV2–NL_2*01_S2193

1412 sequences assigned
151 (10.7%) exact matches, in which:
97 unique CDR3
8 unique J



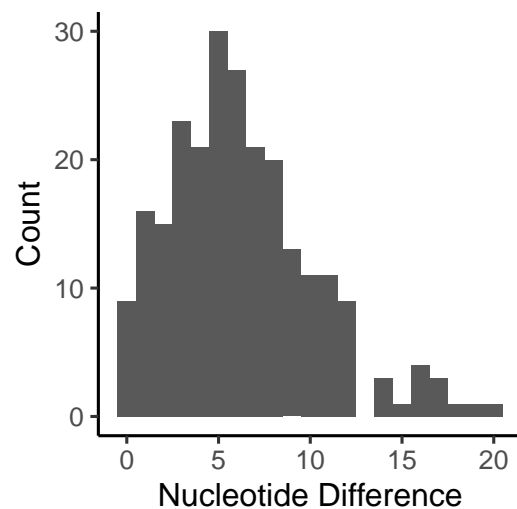
IGHV3–28*01_S3617

6 sequences assigned
No exact matches.



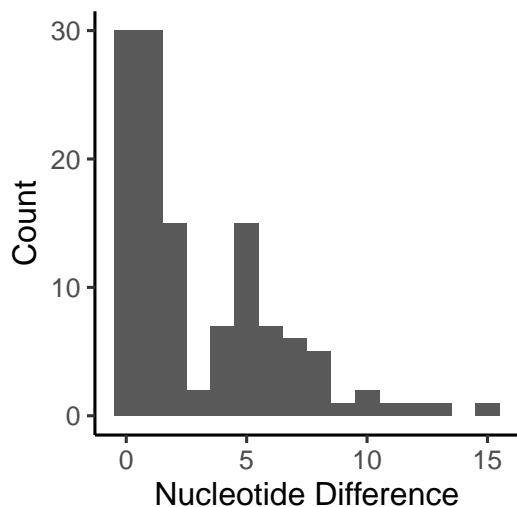
IGHV3–36*01_S6740

242 sequences assigned
9 (3.7%) exact matches, in which:
8 unique CDR3
1 unique J



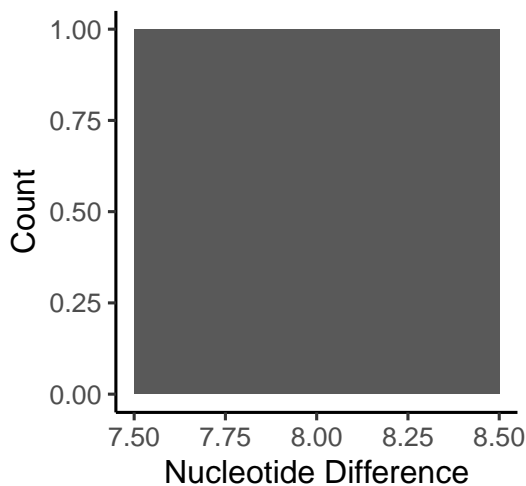
IGHV3–5*01_S1720

125 sequences assigned
30 (24%) exact matches, in which:
19 unique CDR3
4 unique J



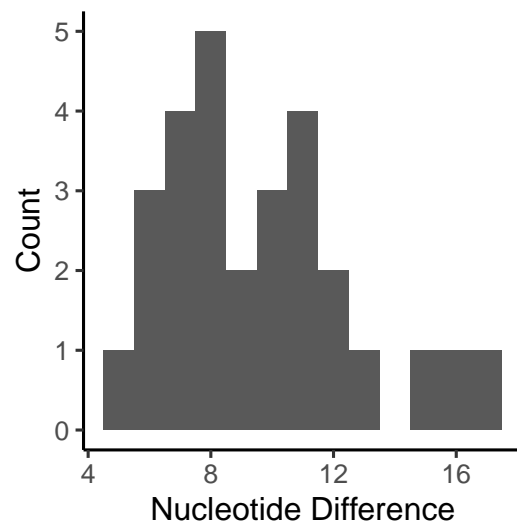
IGHV3–34*01_S1123

1 sequences assigned
No exact matches.



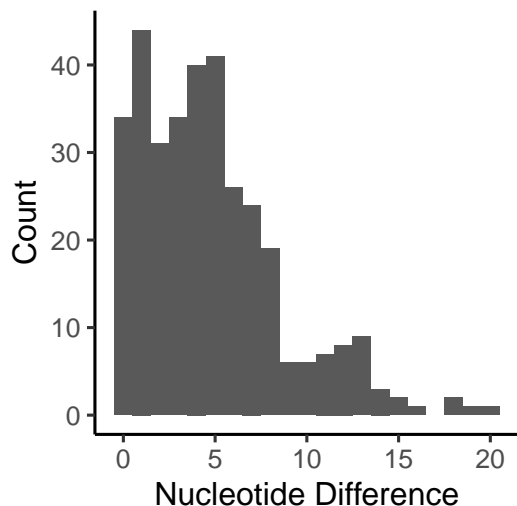
IGHV3–37*01_S0586

29 sequences assigned
No exact matches.



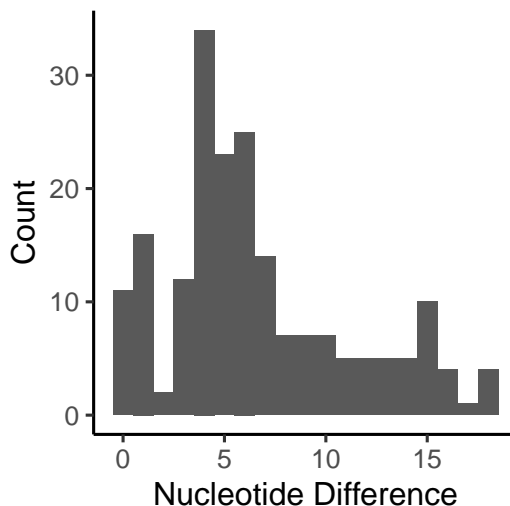
IGHV3-50*01_S8530

364 sequences assigned
34 (9.3%) exact matches, in which:
19 unique CDR3
3 unique J



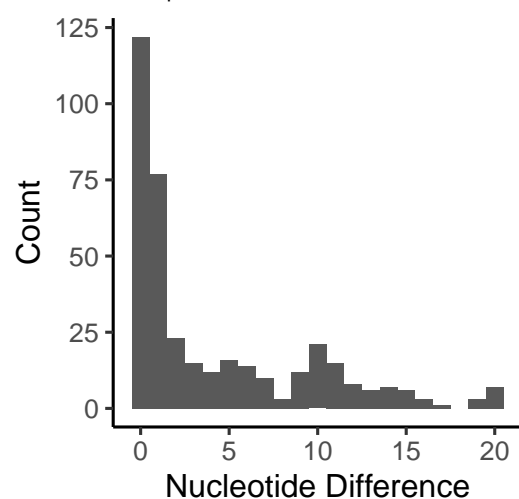
IGHV3-53*01_S2905

204 sequences assigned
11 (5.4%) exact matches, in which:
8 unique CDR3
4 unique J



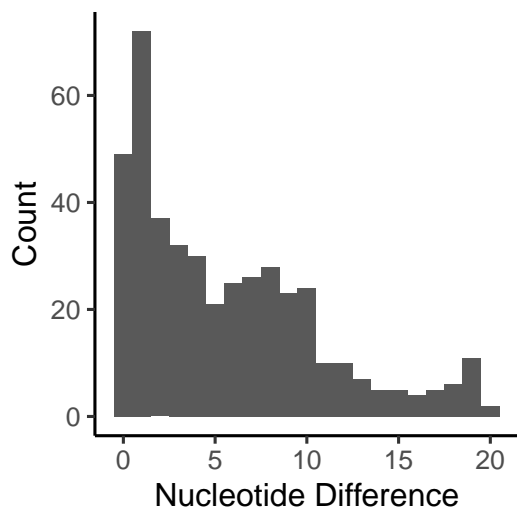
IGHV3-73*02_S4889

396 sequences assigned
122 (30.8%) exact matches, in which:
90 unique CDR3
9 unique J



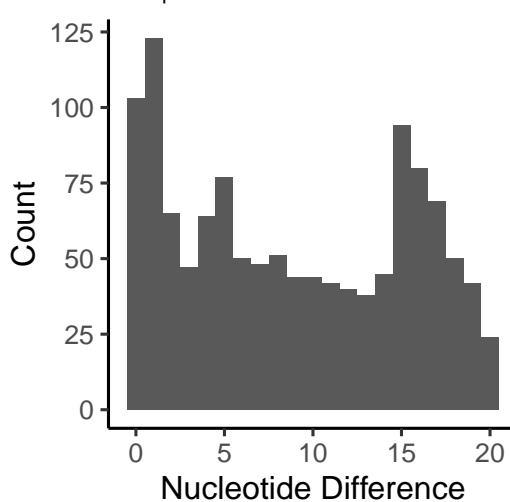
IGHV3-52*02_S4550

439 sequences assigned
49 (11.2%) exact matches, in which:
33 unique CDR3
6 unique J



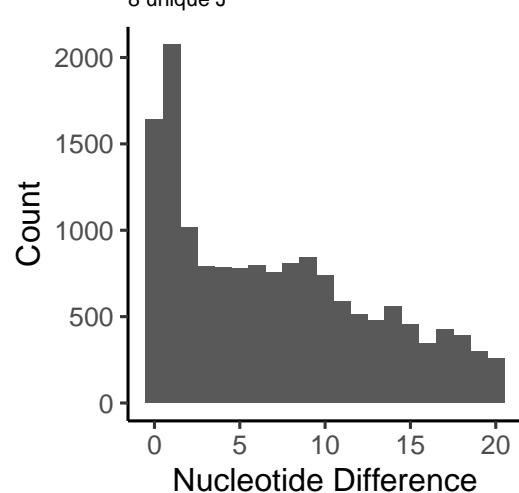
IGHV3-53*01_S3647

1366 sequences assigned
103 (7.5%) exact matches, in which:
78 unique CDR3
6 unique J



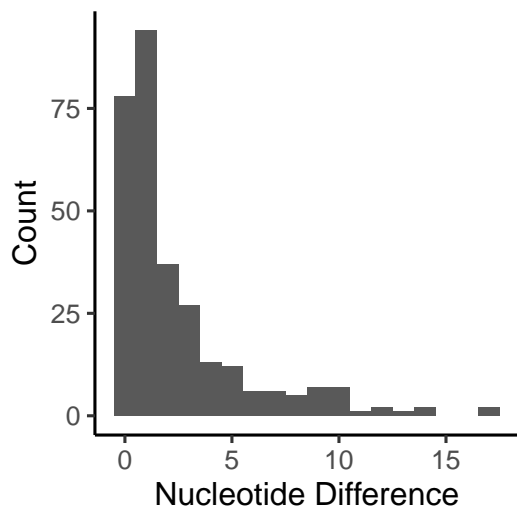
IGHV3-76*01_S9591

16565 sequences assigned
1641 (9.9%) exact matches, in which:
1202 unique CDR3
8 unique J



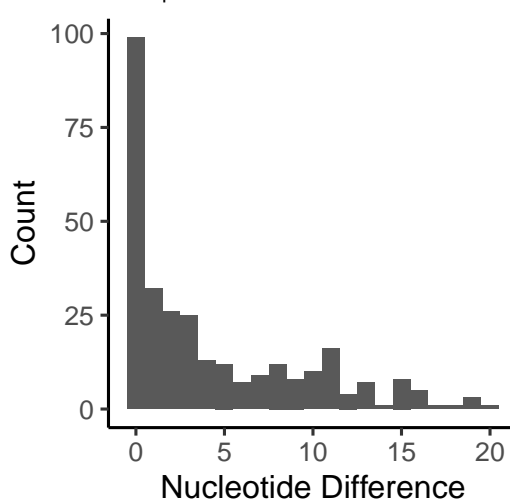
IGHV3-52*02_S6213

301 sequences assigned
78 (25.9%) exact matches, in which:
55 unique CDR3
5 unique J



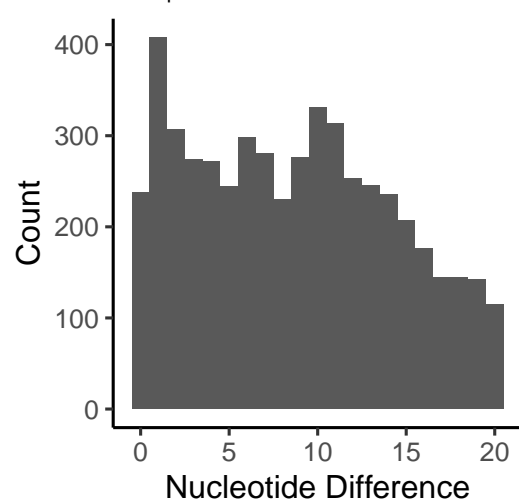
IGHV3-73*01_S7929

302 sequences assigned
99 (32.8%) exact matches, in which:
75 unique CDR3
8 unique J



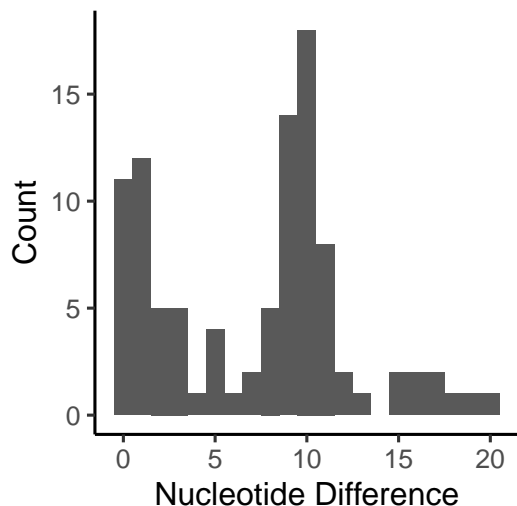
IGHV3-76*02_S4686

5920 sequences assigned
238 (4%) exact matches, in which:
165 unique CDR3
7 unique J



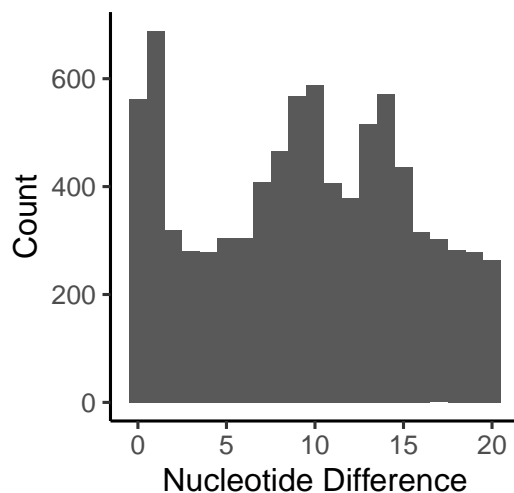
IGHV3-83*02_S1476

102 sequences assigned
11 (10.8%) exact matches, in which:
9 unique CDR3
4 unique J



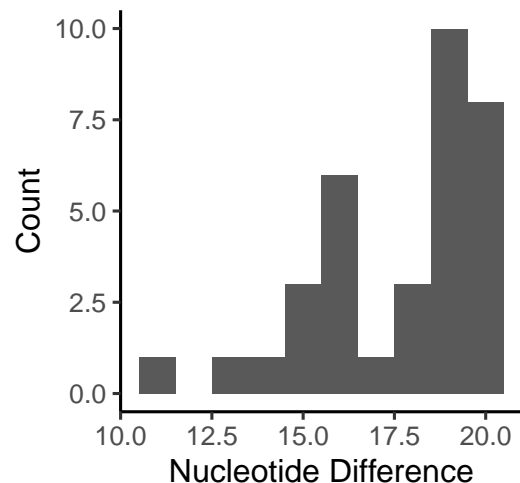
IGHV3-88*02_S1054

9874 sequences assigned
563 (5.7%) exact matches, in which:
386 unique CDR3
10 unique J



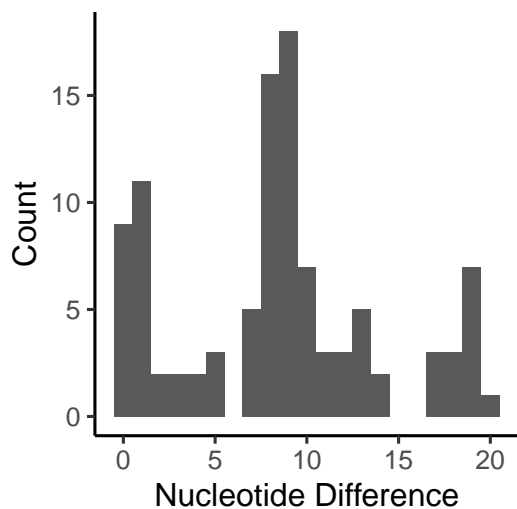
IGHV3-103*01_S0760

61 sequences assigned
No exact matches.



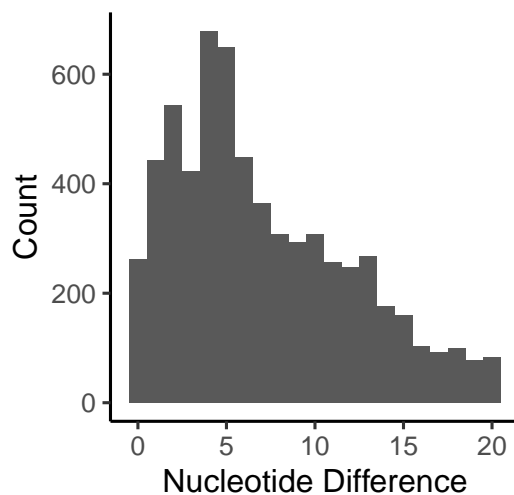
IGHV3-87*01_S1401

109 sequences assigned
9 (8.3%) exact matches, in which:
5 unique CDR3
4 unique J



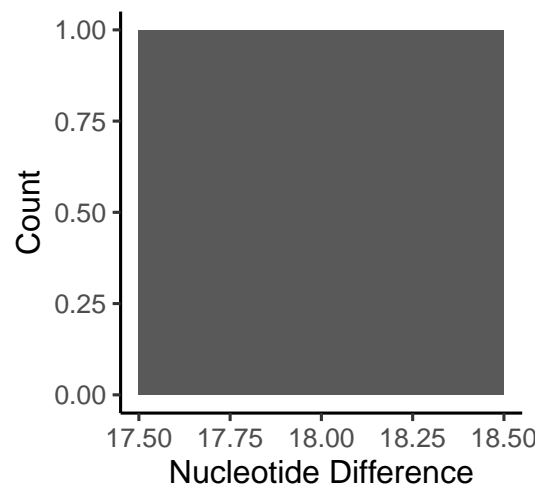
IGHV3-94*01_S8766

6606 sequences assigned
262 (4%) exact matches, in which:
170 unique CDR3
9 unique J



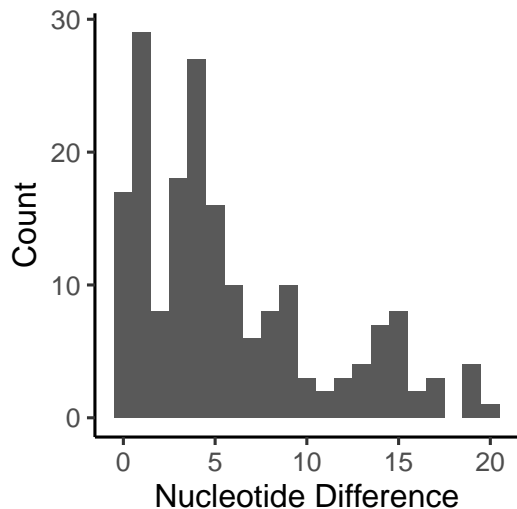
IGHV3-103*01_S1165

3 sequences assigned
No exact matches.



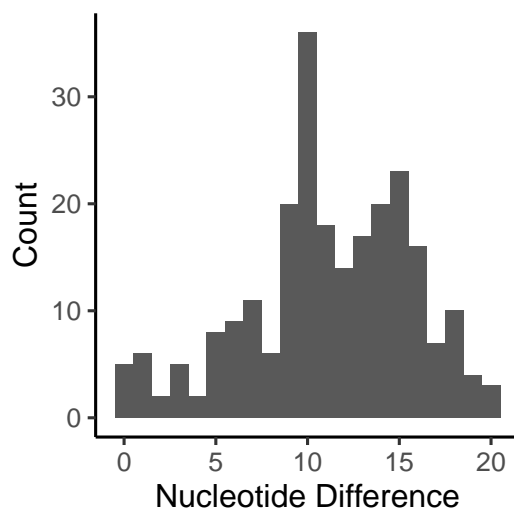
IGHV3-87*01_S2131

188 sequences assigned
17 (9%) exact matches, in which:
11 unique CDR3
4 unique J



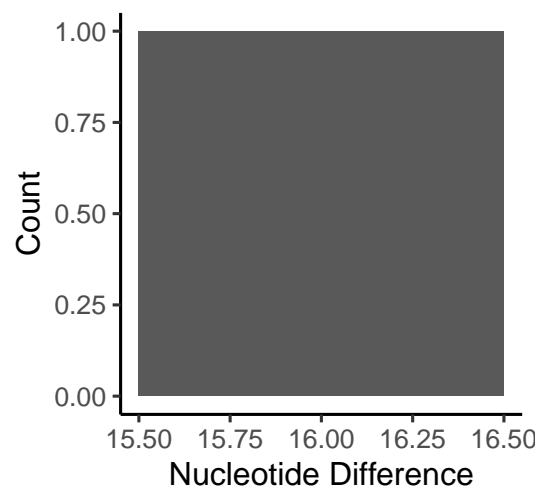
IGHV3-100*01_S5468

265 sequences assigned
5 (1.9%) exact matches, in which:
5 unique CDR3
2 unique J



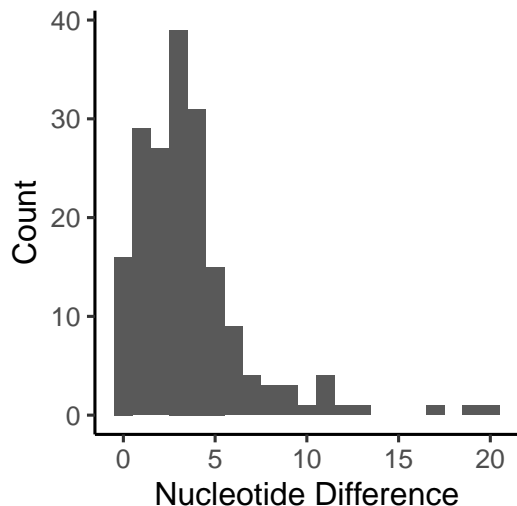
IGHV3-103*01_S6076

2 sequences assigned
No exact matches.



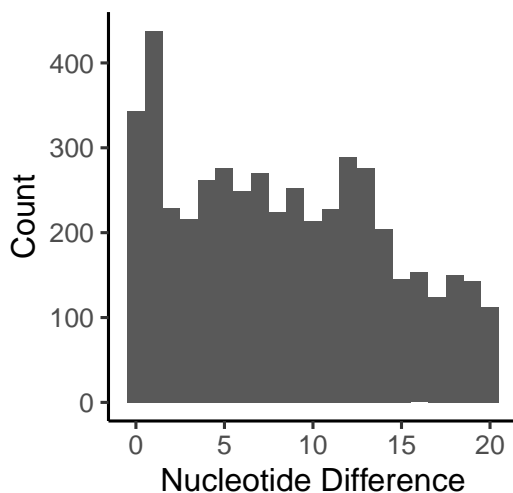
IGHV3-119*01_S1683

186 sequences assigned
16 (8.6%) exact matches, in which:
10 unique CDR3
3 unique J



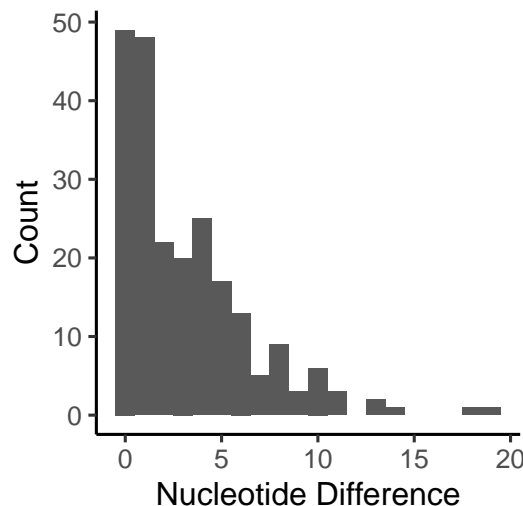
IGHV3-128*01_S3124

5221 sequences assigned
343 (6.6%) exact matches, in which:
222 unique CDR3
7 unique J



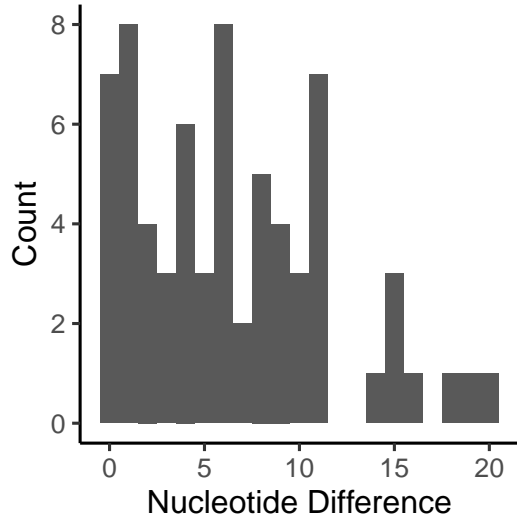
IGHV3-141*02_S4330

230 sequences assigned
49 (21.3%) exact matches, in which:
40 unique CDR3
4 unique J



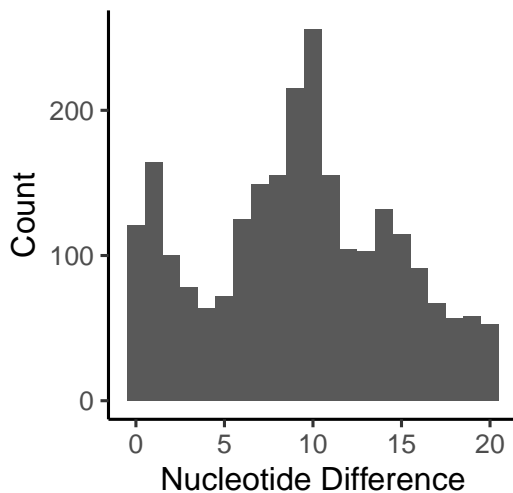
IGHV3-120*01_S7674

74 sequences assigned
7 (9.5%) exact matches, in which:
6 unique CDR3
2 unique J



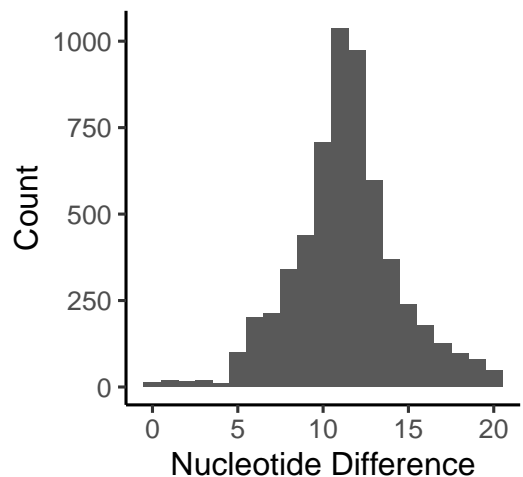
IGHV3-128*02_S7423

3073 sequences assigned
121 (3.9%) exact matches, in which:
77 unique CDR3
7 unique J



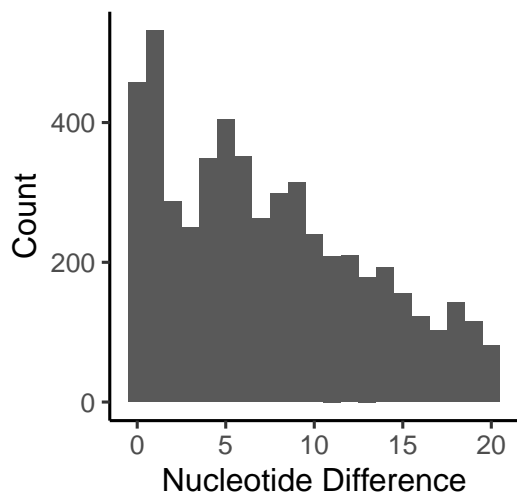
IGHV3-143*01_S1591

6126 sequences assigned
14 (0.2%) exact matches, in which:
11 unique CDR3
3 unique J



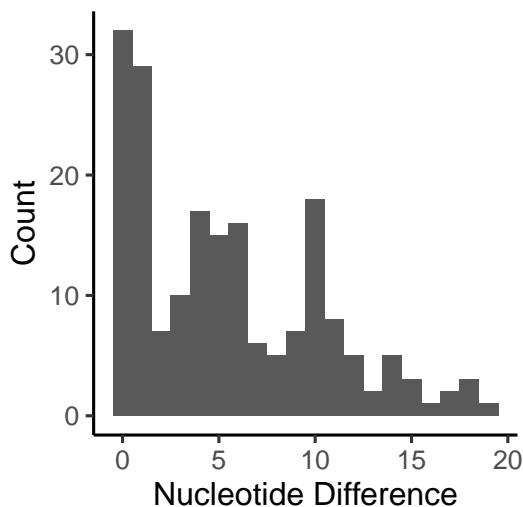
IGHV3-122*01_S8388

5545 sequences assigned
457 (8.2%) exact matches, in which:
323 unique CDR3
8 unique J



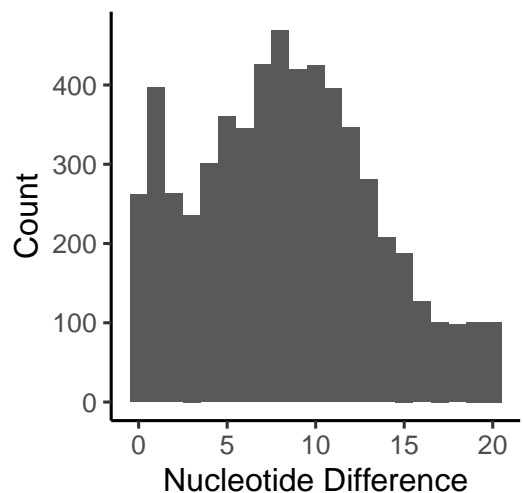
IGHV3-141*01_S2251

194 sequences assigned
32 (16.5%) exact matches, in which:
27 unique CDR3
6 unique J



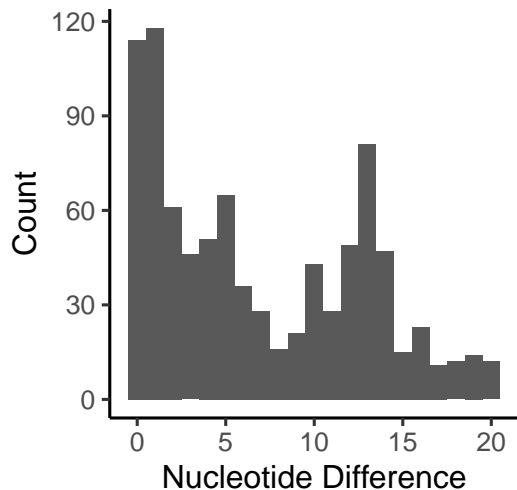
IGHV3-152*01_S7388

6150 sequences assigned
262 (4.3%) exact matches, in which:
175 unique CDR3
7 unique J



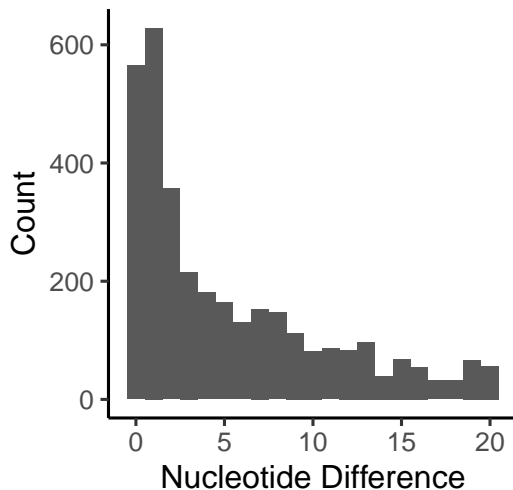
IGHV3-172*01_S1597

923 sequences assigned
114 (12.4%) exact matches, in which:
78 unique CDR3
6 unique J



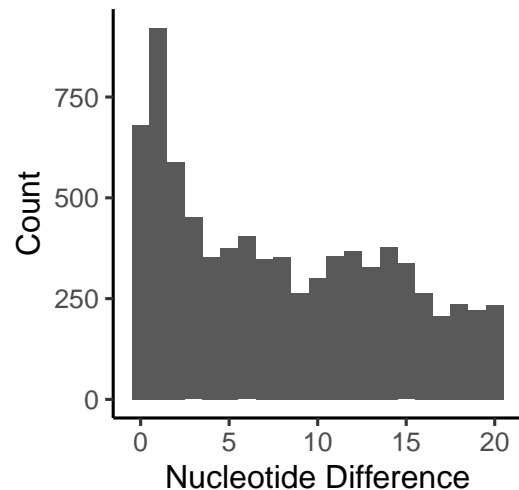
IGHV3-NL_1*01_S4906

3471 sequences assigned
565 (16.3%) exact matches, in which:
367 unique CDR3
9 unique J



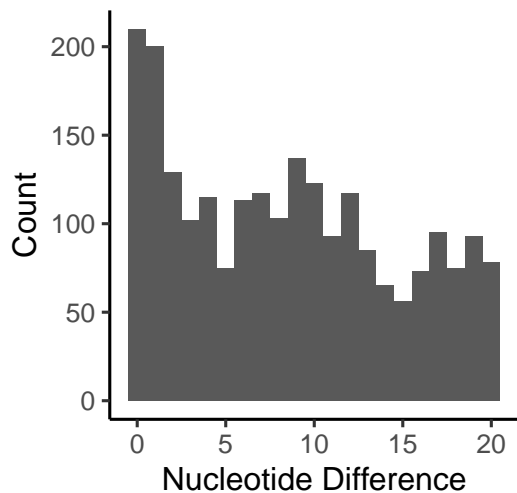
IGHV3-NL_11*01_S4102

9481 sequences assigned
681 (7.2%) exact matches, in which:
484 unique CDR3
8 unique J



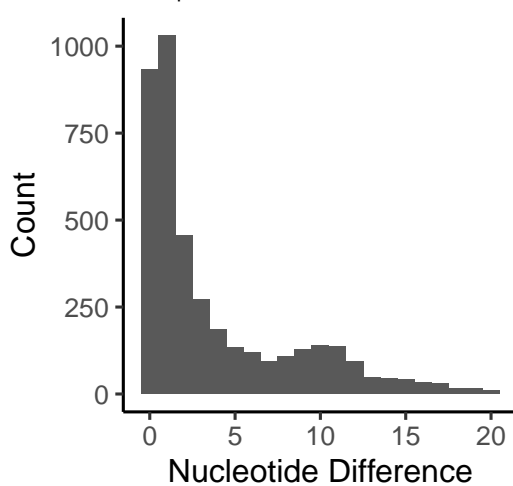
IGHV3-177*01_S8409

2591 sequences assigned
210 (8.1%) exact matches, in which:
149 unique CDR3
7 unique J



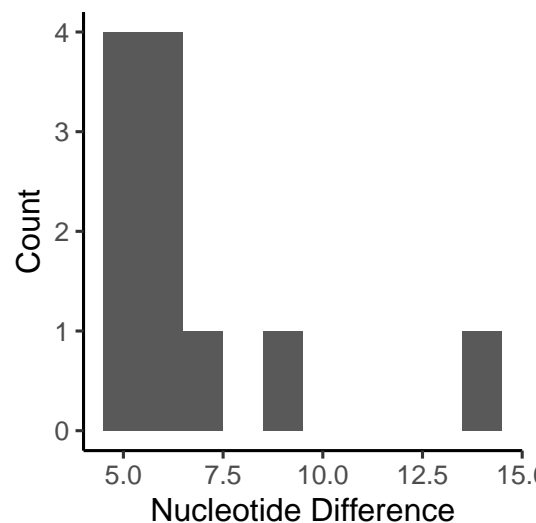
IGHV3-NL_1*01_S6560

4160 sequences assigned
932 (22.4%) exact matches, in which:
652 unique CDR3
8 unique J



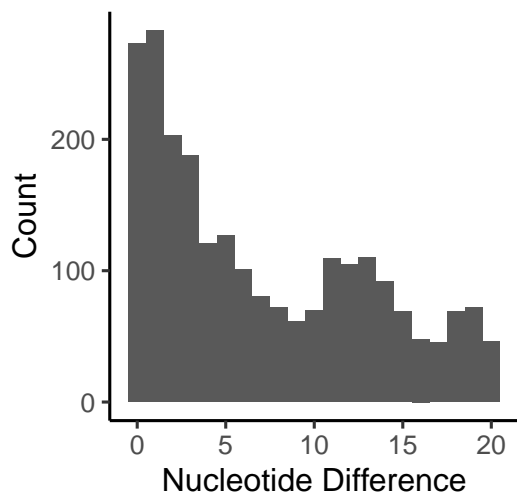
IGHV3-NL_12*02_S5358

11 sequences assigned
No exact matches.



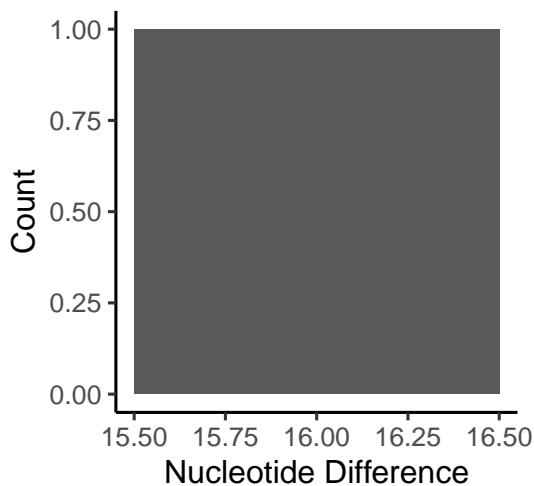
IGHV3-187*01_S9337

2619 sequences assigned
273 (10.4%) exact matches, in which:
193 unique CDR3
8 unique J



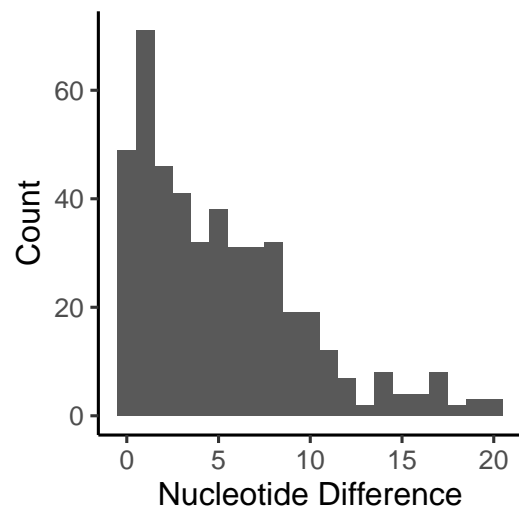
IGHV3-NL_10*02_S3155

2 sequences assigned
No exact matches.



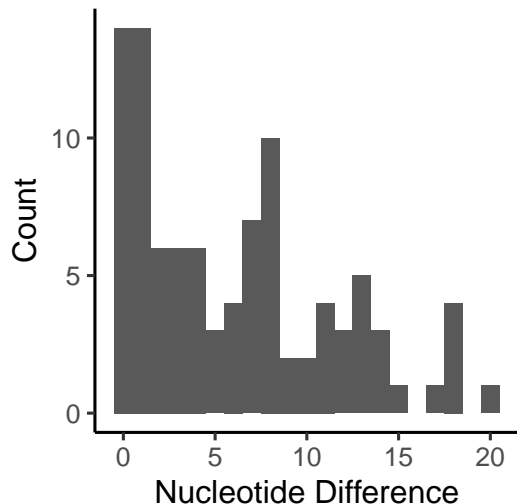
IGHV3-NL_13*01_S3277

467 sequences assigned
49 (10.5%) exact matches, in which:
31 unique CDR3
5 unique J



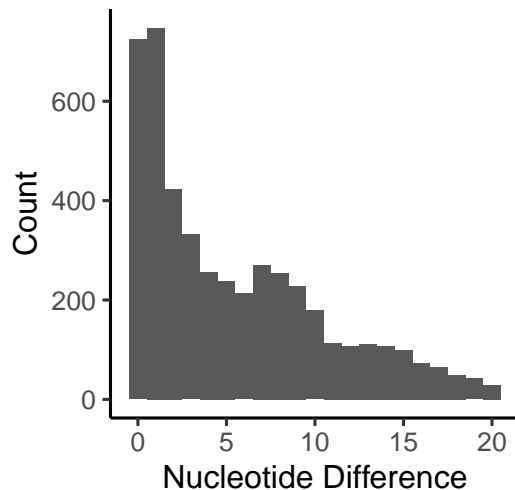
IGHV3–NL_16*01_S5994

97 sequences assigned
14 (14.4%) exact matches, in which:
10 unique CDR3
3 unique J



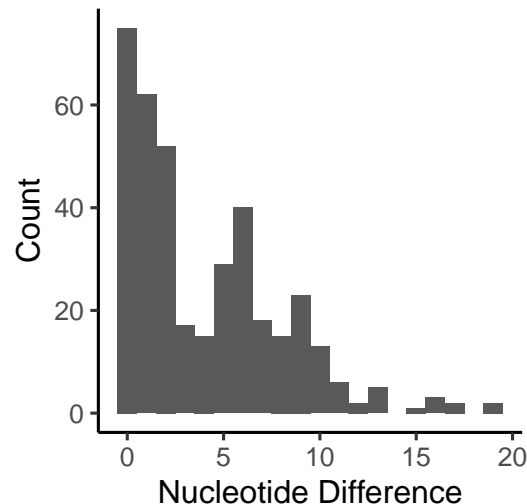
IGHV3–NL_17*01_S6268

4775 sequences assigned
724 (15.2%) exact matches, in which:
477 unique CDR3
7 unique J



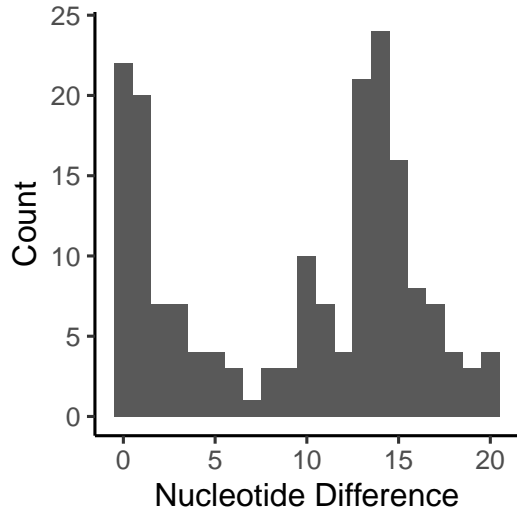
IGHV3–NL_18*01_S7220

384 sequences assigned
75 (19.5%) exact matches, in which:
60 unique CDR3
7 unique J



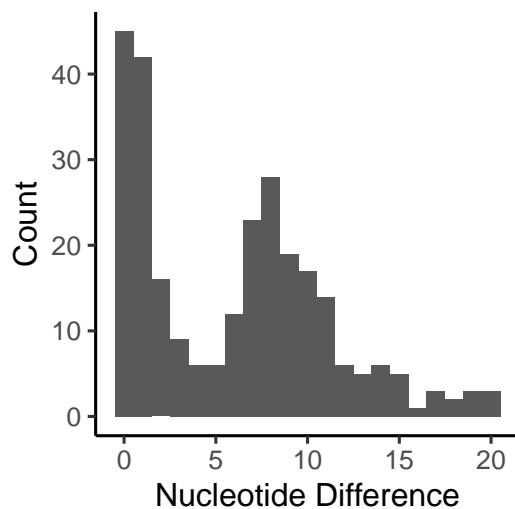
IGHV3–NL_16*01_S7825

194 sequences assigned
22 (11.3%) exact matches, in which:
13 unique CDR3
4 unique J



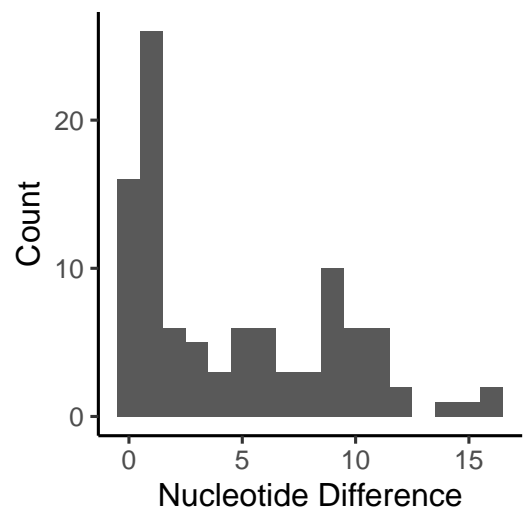
IGHV3–NL_18*01_S3886

362 sequences assigned
45 (12.4%) exact matches, in which:
36 unique CDR3
7 unique J



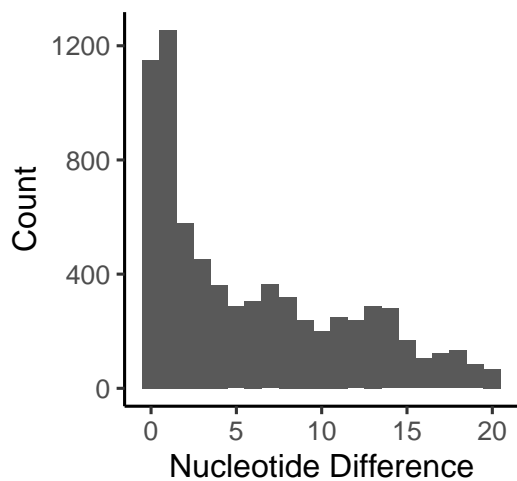
IGHV3–NL_2*01_S9710

109 sequences assigned
16 (14.7%) exact matches, in which:
14 unique CDR3
6 unique J



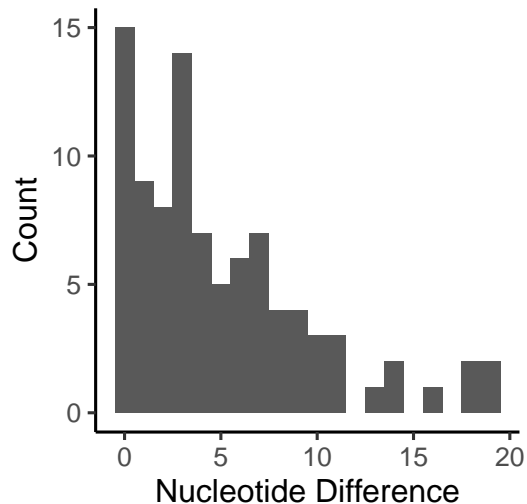
IGHV3–NL_17*01_S425

7557 sequences assigned
1149 (15.2%) exact matches, in which:
776 unique CDR3
9 unique J



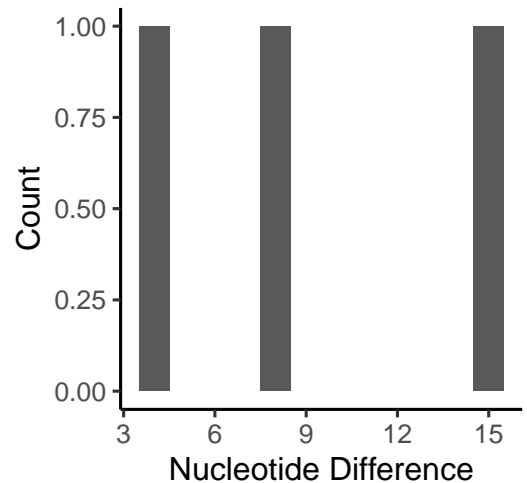
IGHV3–NL_18*01_S6396

93 sequences assigned
15 (16.1%) exact matches, in which:
14 unique CDR3
5 unique J



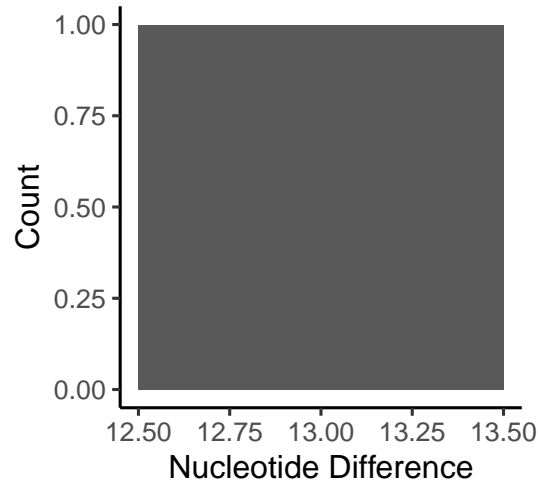
IGHV3–NL_4*01_S6875

3 sequences assigned
No exact matches.



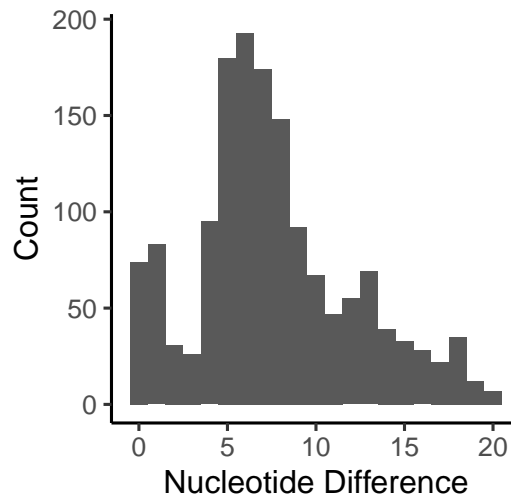
IGHV3–NL_4*01_S9635

1 sequences assigned
No exact matches.



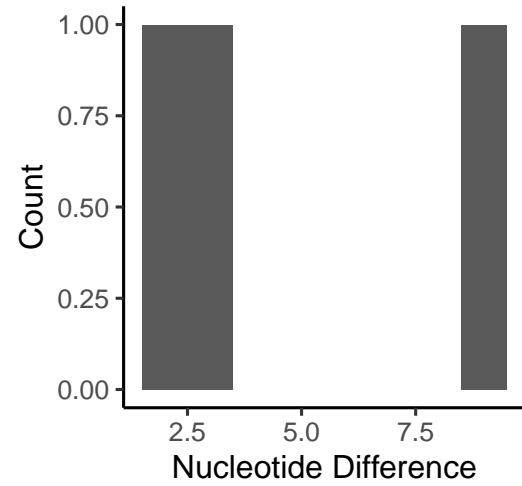
IGHV3–NL_8*01_S7415

1590 sequences assigned
74 (4.7%) exact matches, in which:
47 unique CDR3
5 unique J



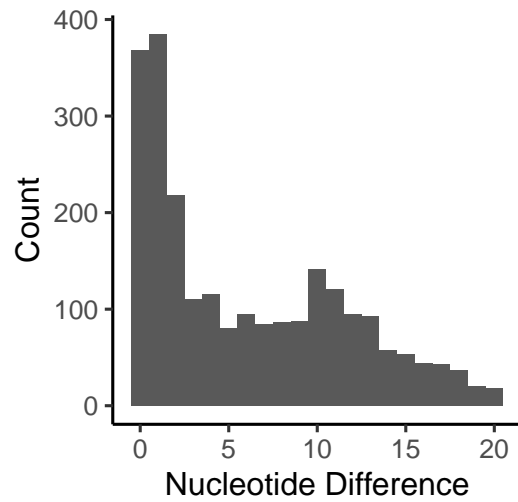
IGHV4–72*01_S8261

3 sequences assigned
No exact matches.



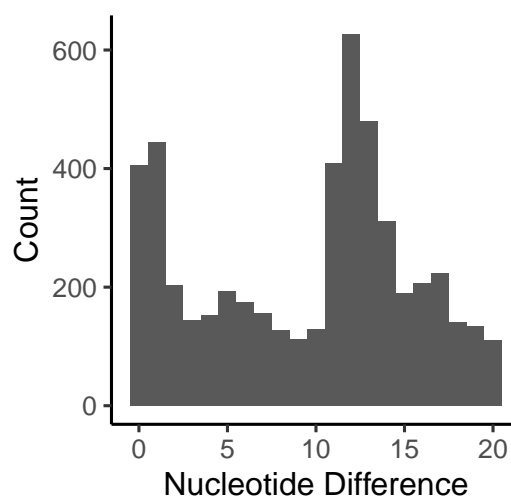
IGHV3–NL_5*01_S4429

2414 sequences assigned
368 (15.2%) exact matches, in which:
230 unique CDR3
8 unique J



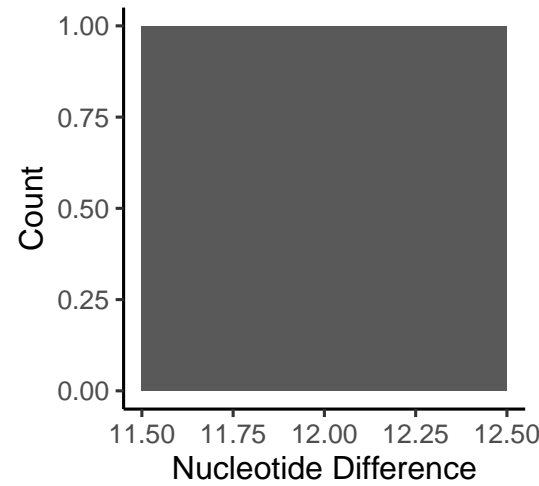
IGHV3–NL_9*01_S6098

5886 sequences assigned
405 (6.9%) exact matches, in which:
277 unique CDR3
8 unique J



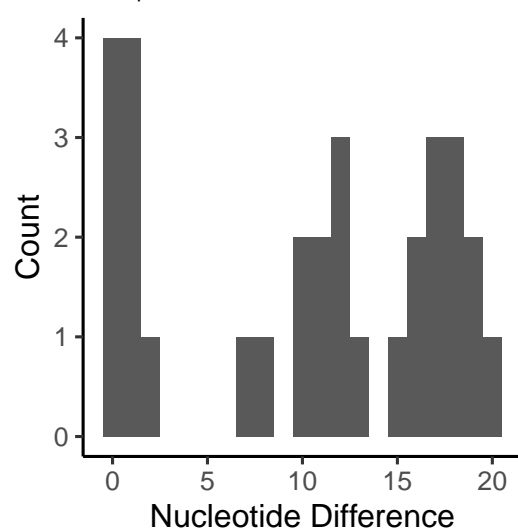
IGHV4–93*01_S5203

5 sequences assigned
No exact matches.



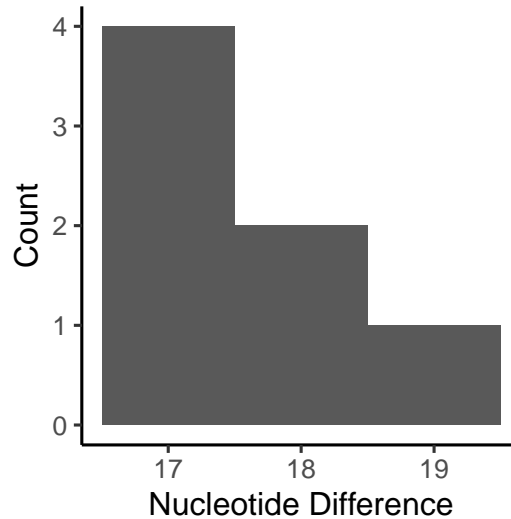
IGHV3–NL_6*02_S6474

32 sequences assigned
4 (12.5%) exact matches, in which:
4 unique CDR3
2 unique J



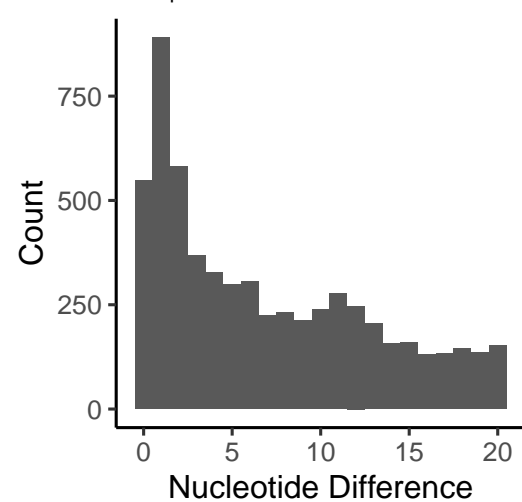
IGHV4–67*02_S1312

7 sequences assigned
No exact matches.



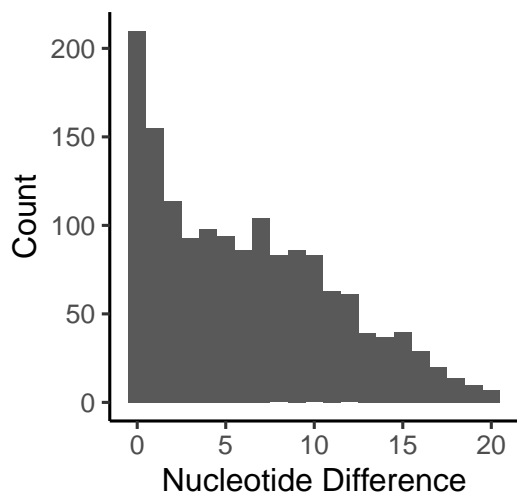
IGHV4–117*01_S2181

6722 sequences assigned
548 (8.2%) exact matches, in which:
471 unique CDR3
8 unique J



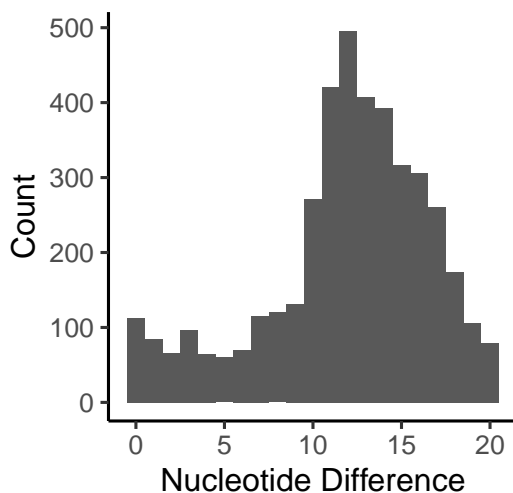
IGHV4–117*01_S6852

1582 sequences assigned
210 (13.3%) exact matches, in which:
187 unique CDR3
8 unique J



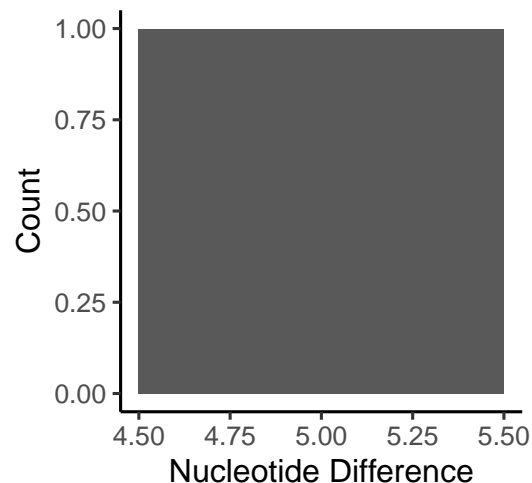
IGHV4–149*01_S2186

4425 sequences assigned
113 (2.6%) exact matches, in which:
82 unique CDR3
7 unique J



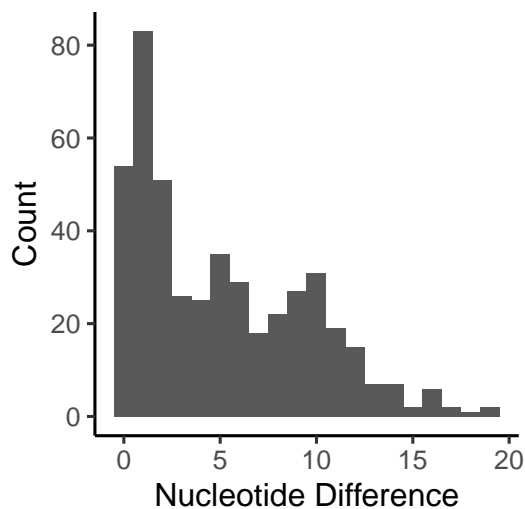
IGHV4–150*01_S4911

1 sequences assigned
No exact matches.



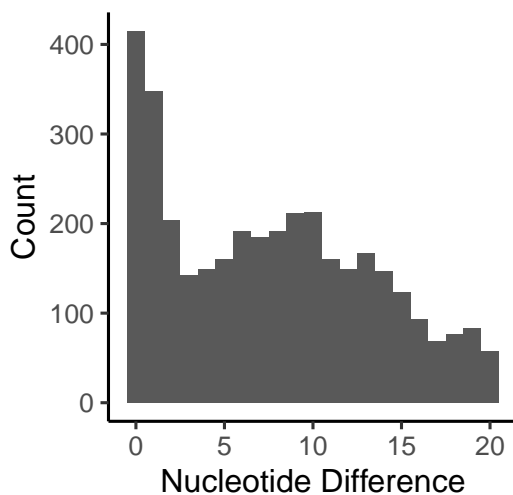
IGHV4–144*01_S0298

467 sequences assigned
54 (11.6%) exact matches, in which:
41 unique CDR3
6 unique J



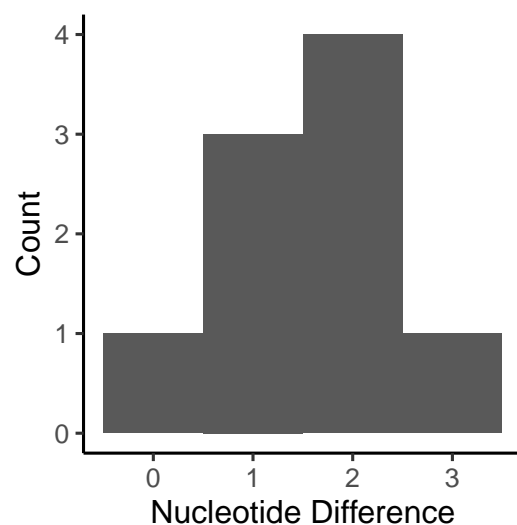
IGHV4–149*01_S4098

3854 sequences assigned
415 (10.8%) exact matches, in which:
347 unique CDR3
10 unique J



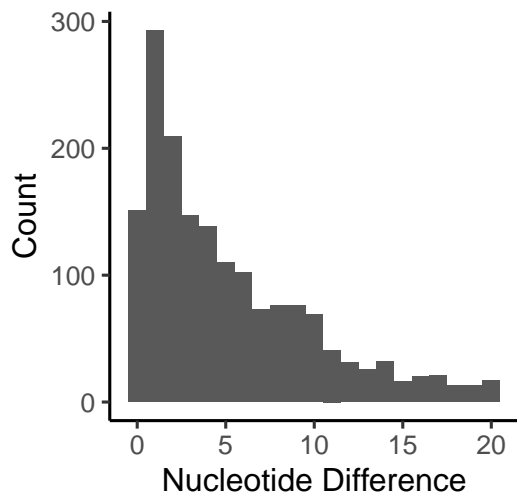
IGHV4–150*01_S6885

9 sequences assigned
1 (11.1%) exact matches, in which:
1 unique CDR3
1 unique J



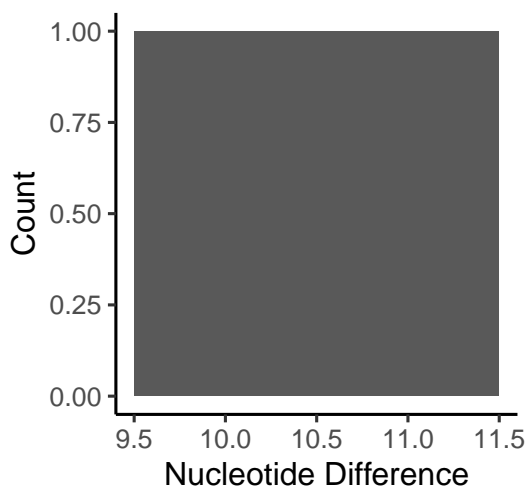
IGHV4–144*01_S6192

1822 sequences assigned
151 (8.3%) exact matches, in which:
132 unique CDR3
7 unique J



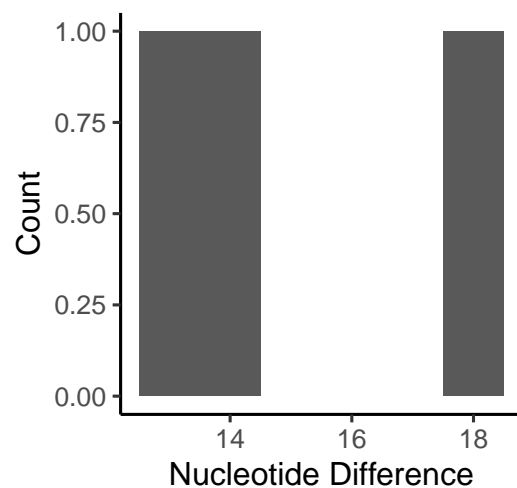
IGHV4–150*01_S0971

2 sequences assigned
No exact matches.



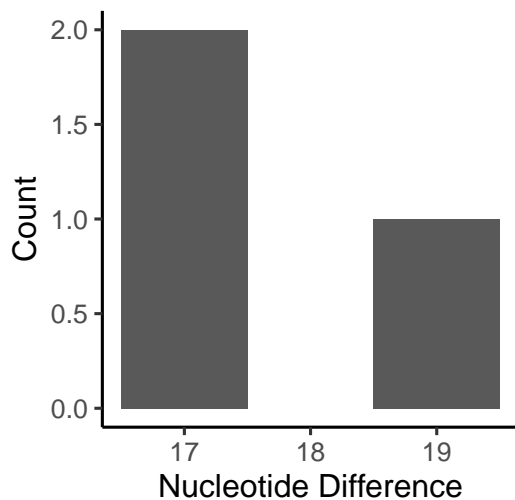
IGHV4–174*02_S7573

8 sequences assigned
No exact matches.



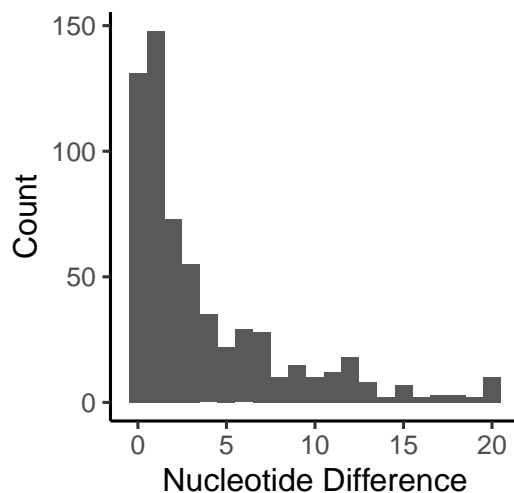
IGHV4-174*02_S9172

3 sequences assigned
No exact matches.



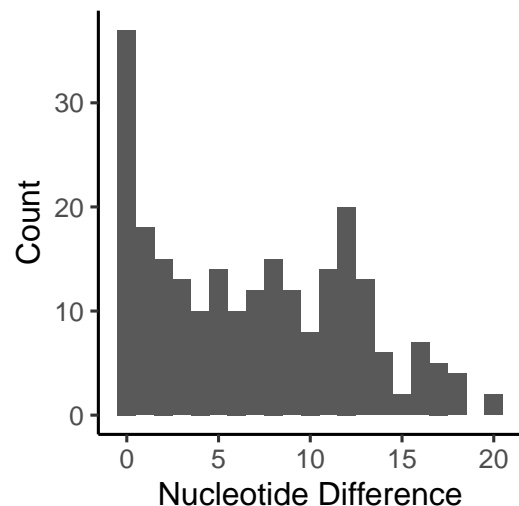
IGHV4-NL_1*02_S7536

634 sequences assigned
131 (20.7%) exact matches, in which:
109 unique CDR3
7 unique J



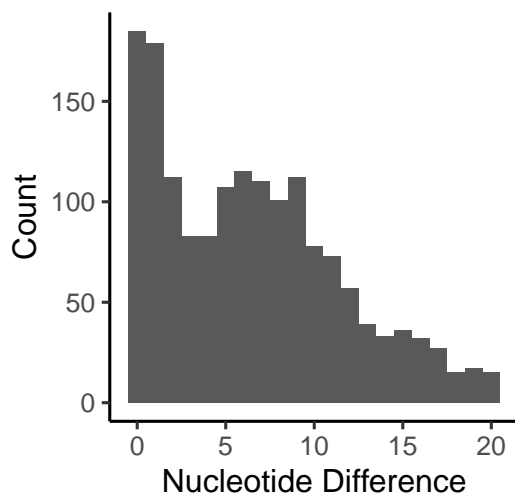
IGHV4-NL_10*01_S4164

314 sequences assigned
37 (11.8%) exact matches, in which:
35 unique CDR3
6 unique J



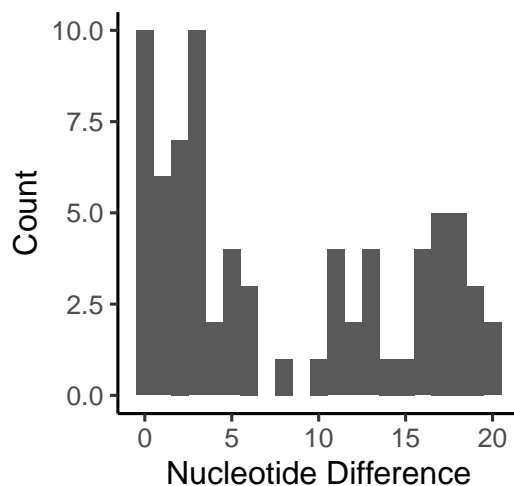
IGHV4-NL_1*01_S8520

1774 sequences assigned
185 (10.4%) exact matches, in which:
166 unique CDR3
8 unique J



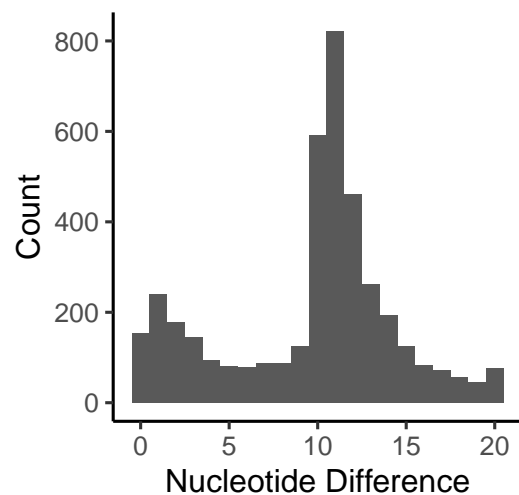
IGHV4-NL_1*02_S9550

76 sequences assigned
10 (13.2%) exact matches, in which:
9 unique CDR3
4 unique J



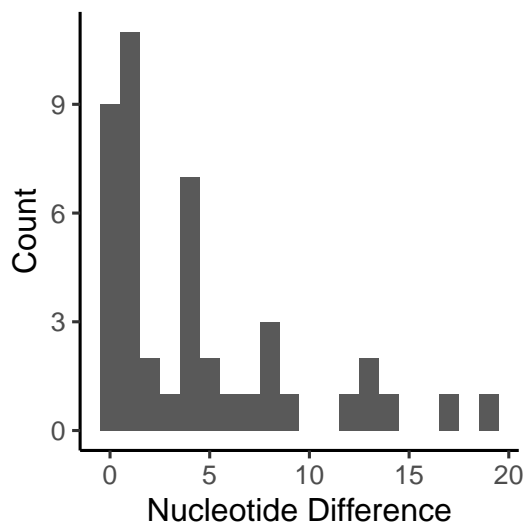
IGHV4-NL_12*01_S6471

4498 sequences assigned
153 (3.4%) exact matches, in which:
137 unique CDR3
7 unique J



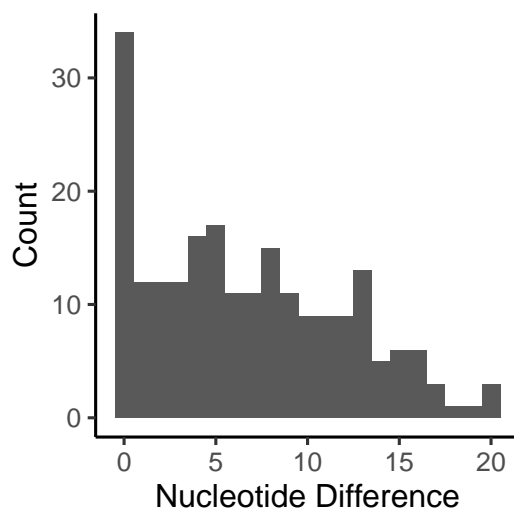
IGHV4-NL_1*02_S2201

46 sequences assigned
9 (19.6%) exact matches, in which:
9 unique CDR3
2 unique J



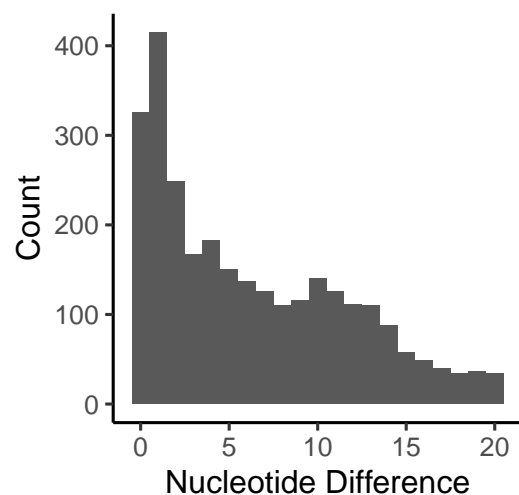
IGHV4-NL_10*01_S4164

258 sequences assigned
34 (13.2%) exact matches, in which:
32 unique CDR3
6 unique J



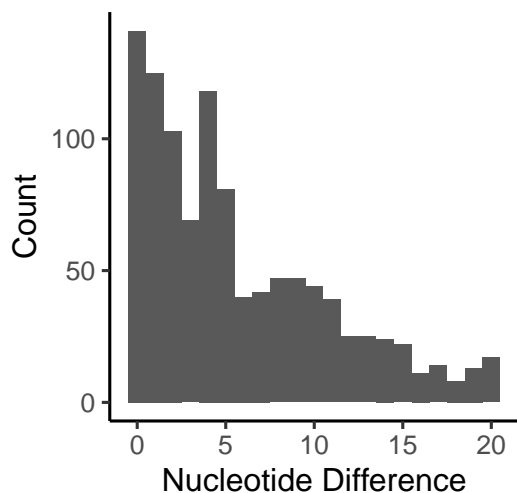
IGHV4-NL_13*01_S9273

3138 sequences assigned
325 (10.4%) exact matches, in which:
300 unique CDR3
8 unique J



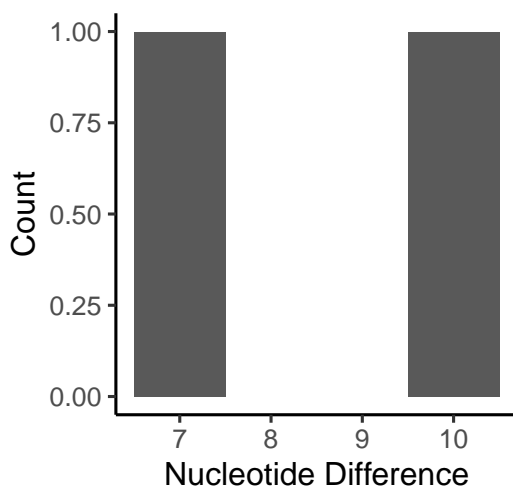
IGHV4–NL_16*01_S2458

1110 sequences assigned
141 (12.7%) exact matches, in which:
117 unique CDR3
7 unique J



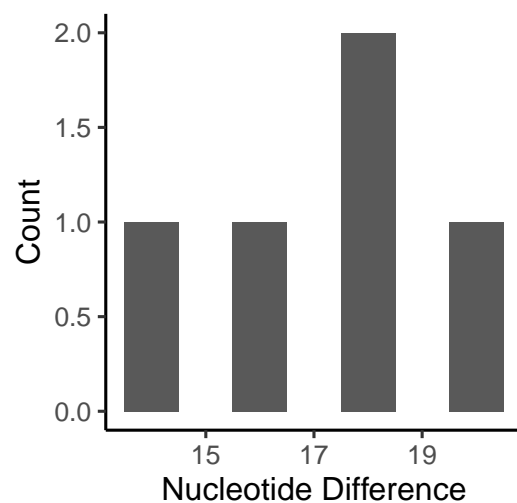
IGHV4–NL_18*01_S0143

2 sequences assigned
No exact matches.



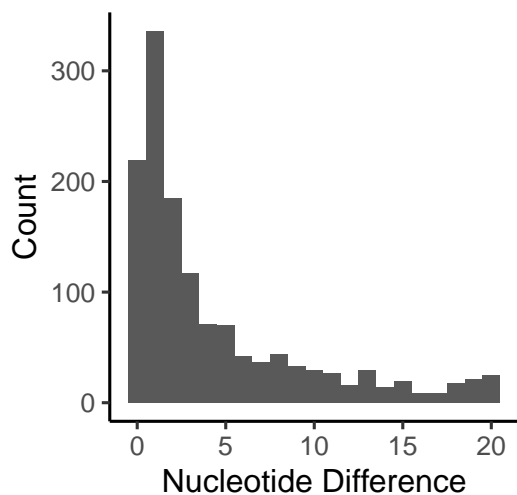
IGHV4–NL_21*01_S3442

7 sequences assigned
No exact matches.



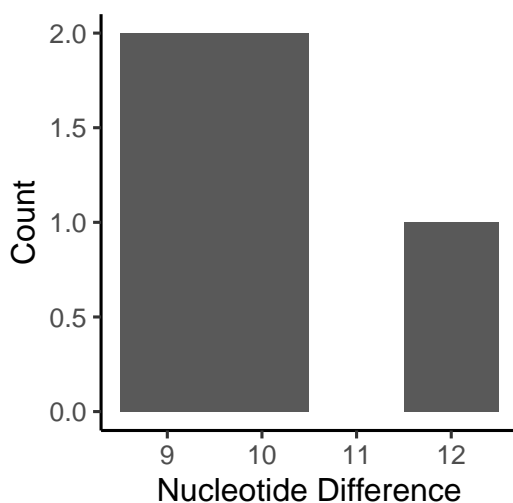
IGHV4–NL_17*01_S6249

1543 sequences assigned
219 (14.2%) exact matches, in which:
201 unique CDR3
7 unique J



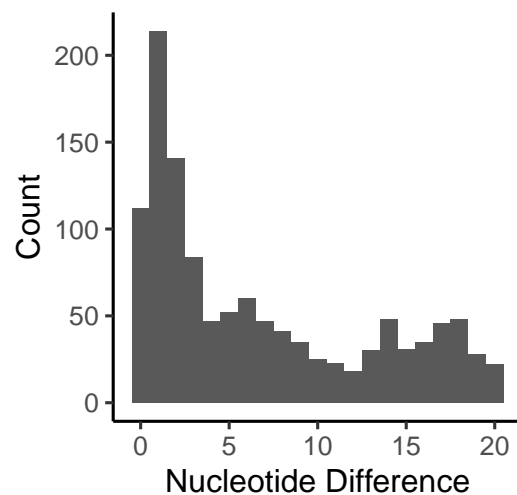
IGHV4–NL_18*01_S3907

6 sequences assigned
No exact matches.



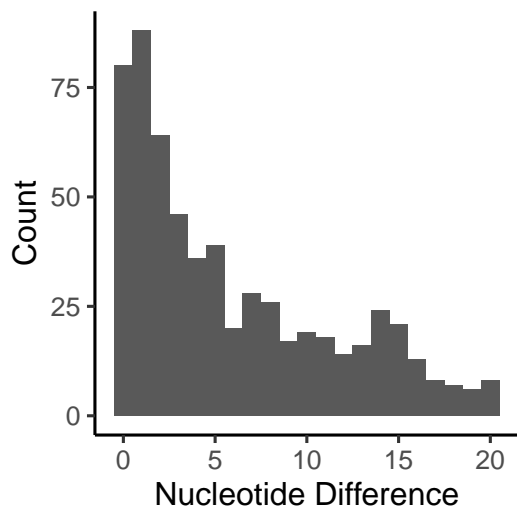
IGHV4–NL_22*01_S2393

1270 sequences assigned
112 (8.8%) exact matches, in which:
99 unique CDR3
7 unique J



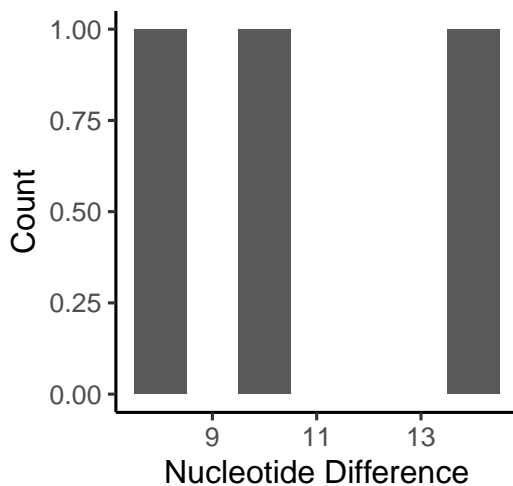
IGHV4–NL_17*01_S6933

653 sequences assigned
80 (12.3%) exact matches, in which:
72 unique CDR3
7 unique J



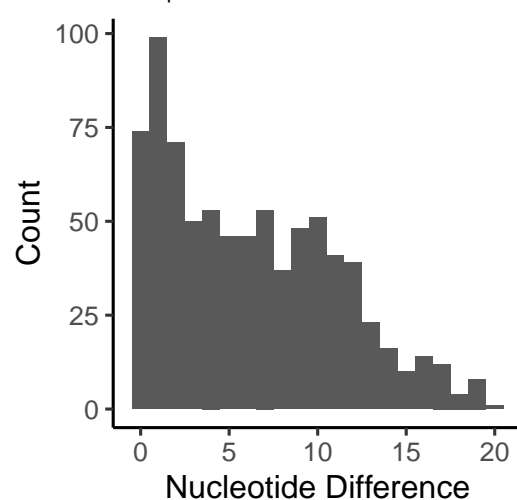
IGHV4–NL_21*01_S2225

3 sequences assigned
No exact matches.



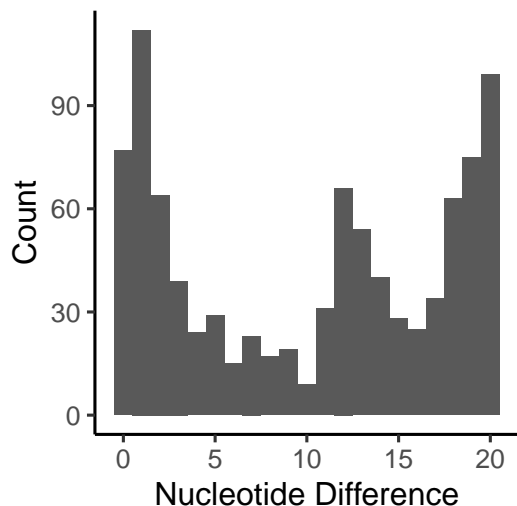
IGHV4–NL_22*01_S4706

813 sequences assigned
74 (9.1%) exact matches, in which:
58 unique CDR3
6 unique J



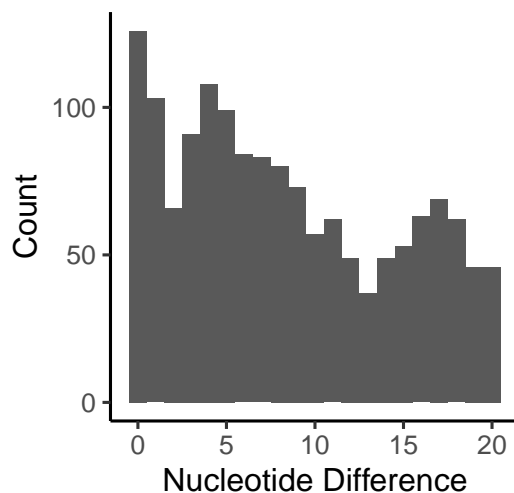
IGHV4–NL_25*01_S1514

1300 sequences assigned
77 (5.9%) exact matches, in which:
65 unique CDR3
7 unique J



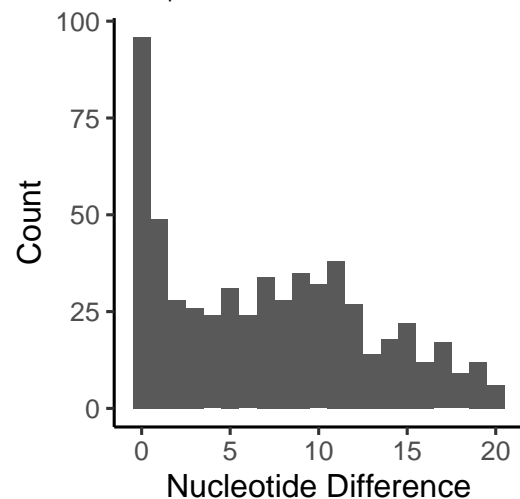
IGHV4–NL_27*01_S6960

1771 sequences assigned
126 (7.1%) exact matches, in which:
103 unique CDR3
7 unique J



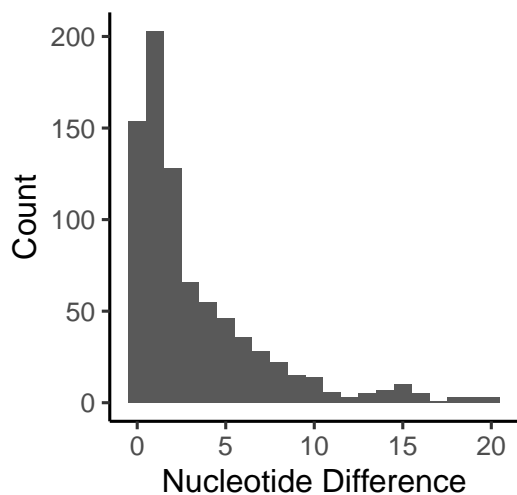
IGHV4–NL_28*01_S1005

634 sequences assigned
96 (15.1%) exact matches, in which:
89 unique CDR3
6 unique J



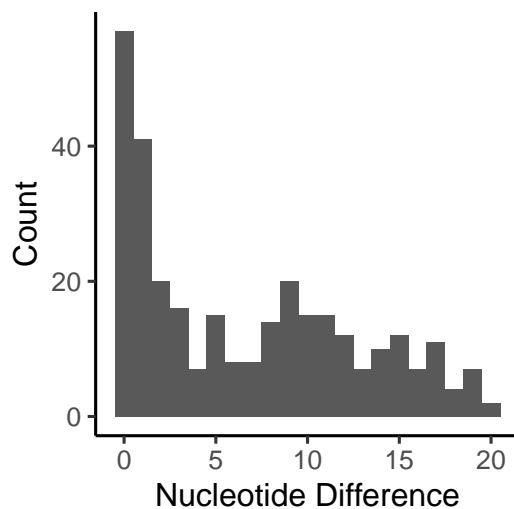
IGHV4–NL_27*01_S0482

835 sequences assigned
154 (18.4%) exact matches, in which:
130 unique CDR3
7 unique J



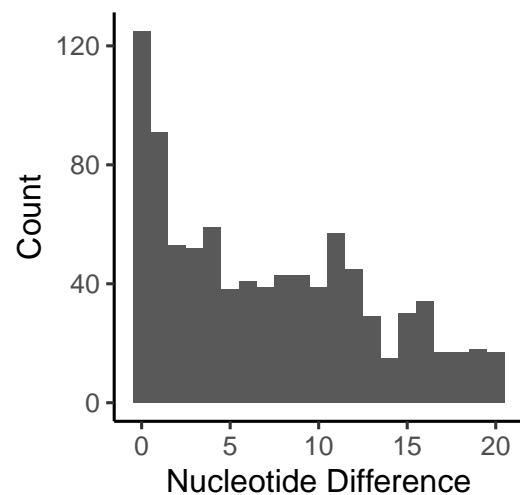
IGHV4–NL_28*01_S0629

324 sequences assigned
57 (17.6%) exact matches, in which:
52 unique CDR3
6 unique J



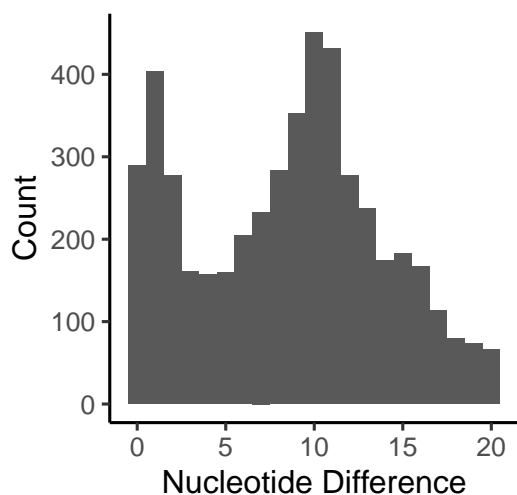
IGHV4–NL_28*01_S1005

971 sequences assigned
125 (12.9%) exact matches, in which:
116 unique CDR3
5 unique J



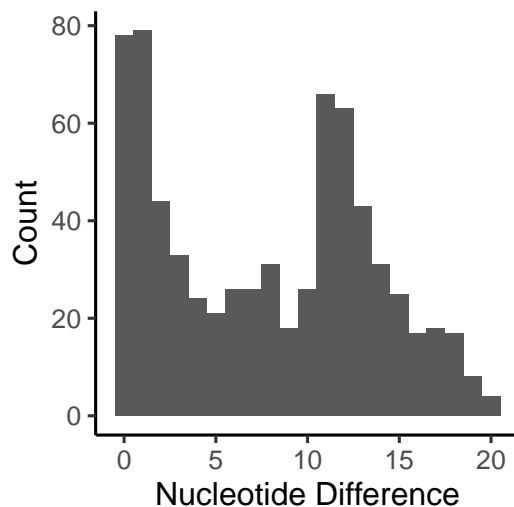
IGHV4–NL_27*01_S1515

5443 sequences assigned
289 (5.3%) exact matches, in which:
258 unique CDR3
7 unique J



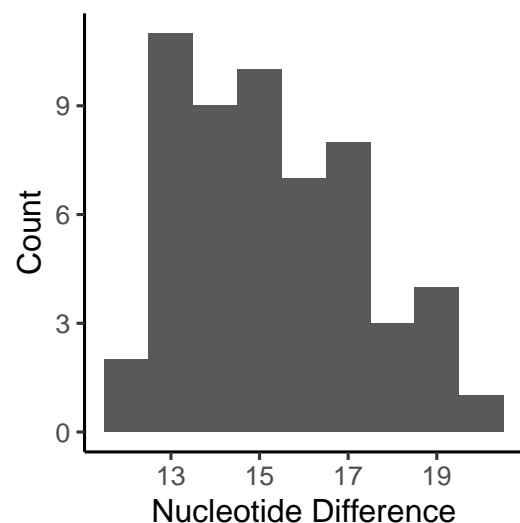
IGHV4–NL_28*01_S0629_

740 sequences assigned
78 (10.5%) exact matches, in which:
71 unique CDR3
7 unique J



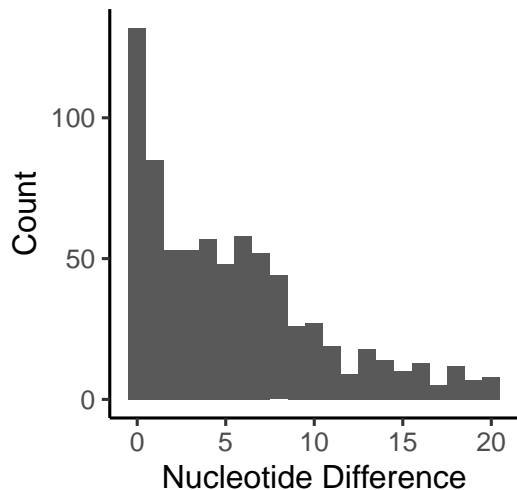
IGHV4–NL_3*01_S5200

77 sequences assigned
No exact matches.



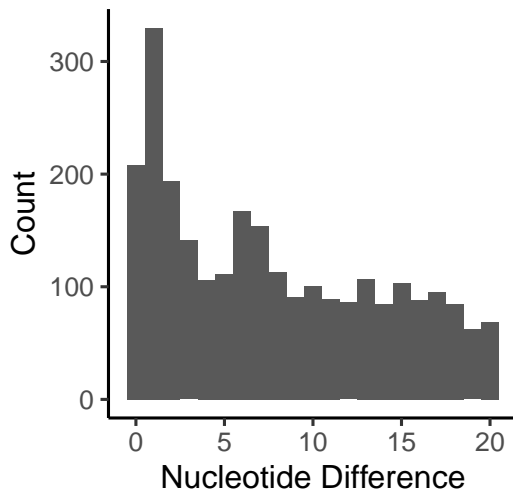
IGHV4–NL_30*01_S1240

779 sequences assigned
132 (16.9%) exact matches, in which:
118 unique CDR3
7 unique J



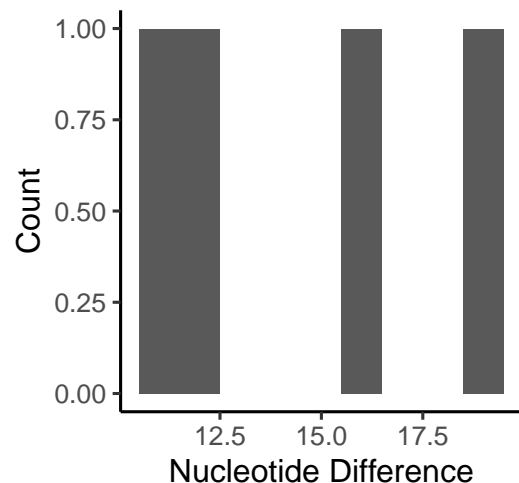
IGHV4–NL_33*01_S9333

2967 sequences assigned
208 (7%) exact matches, in which:
184 unique CDR3
7 unique J



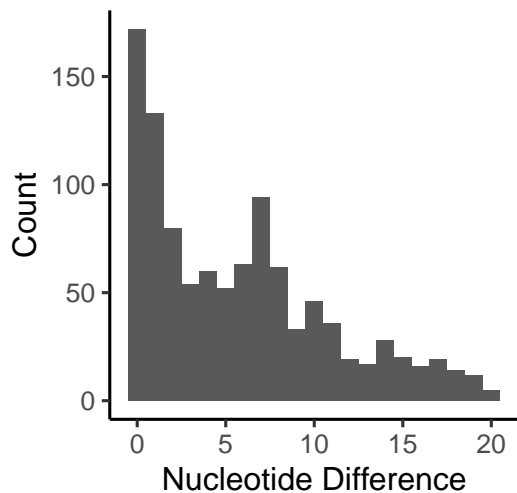
IGHV4–NL_36*01_S9644

5 sequences assigned
No exact matches.



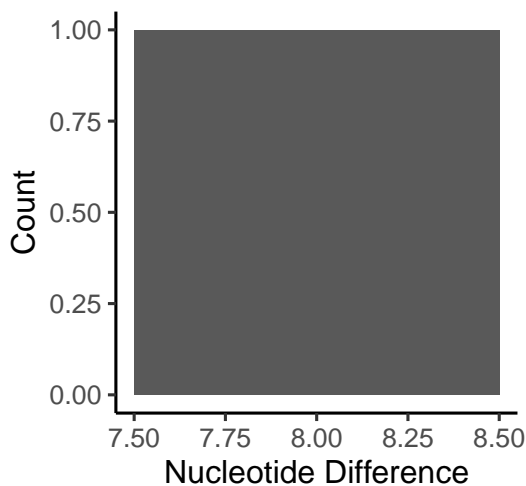
IGHV4–NL_30*01_S1240

1068 sequences assigned
172 (16.1%) exact matches, in which:
148 unique CDR3
7 unique J



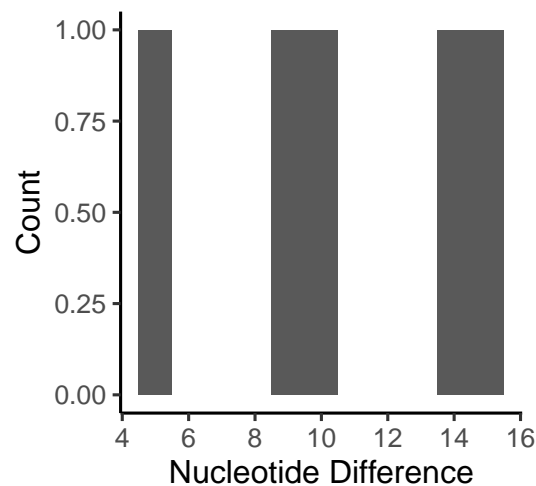
IGHV4–NL_36*01_S1694

2 sequences assigned
No exact matches.



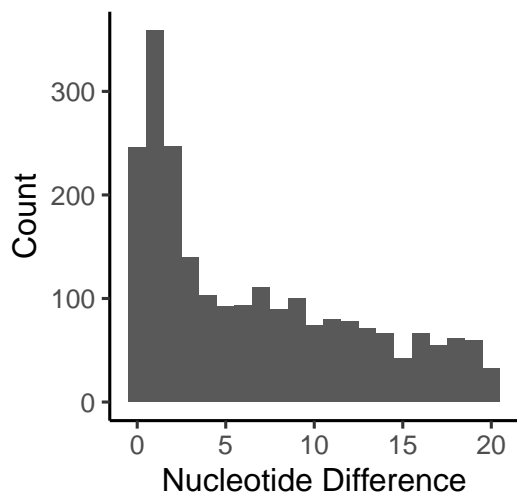
IGHV4–NL_36*01_S9894

5 sequences assigned
No exact matches.



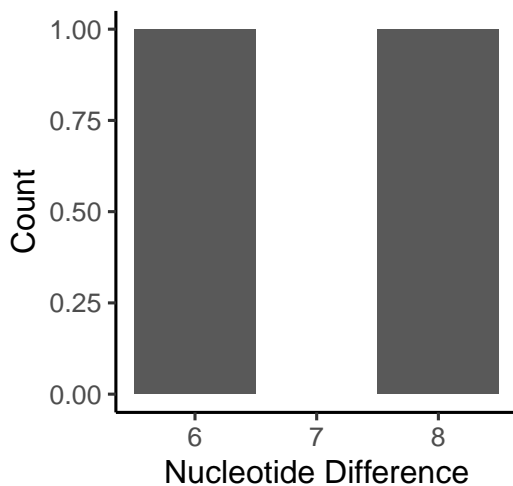
IGHV4–NL_33*01_S9199

2658 sequences assigned
246 (9.3%) exact matches, in which:
212 unique CDR3
7 unique J



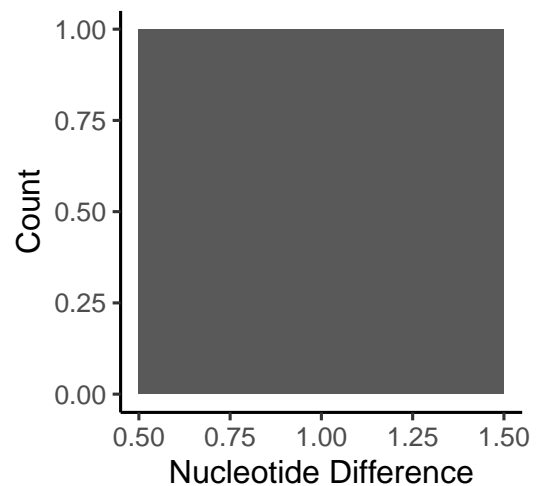
IGHV4–NL_36*01_S5847

2 sequences assigned
No exact matches.



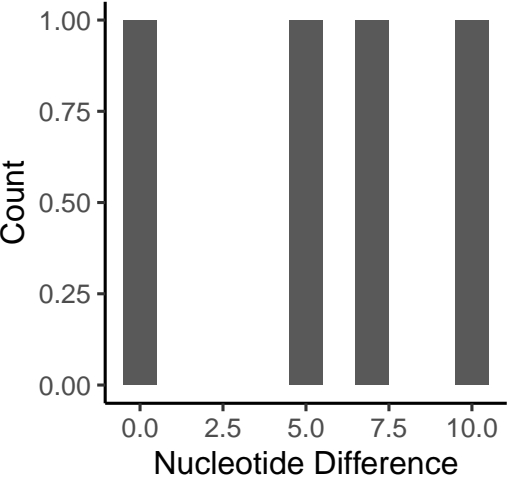
IGHV4–NL_37*01_S0825

1 sequences assigned
No exact matches.



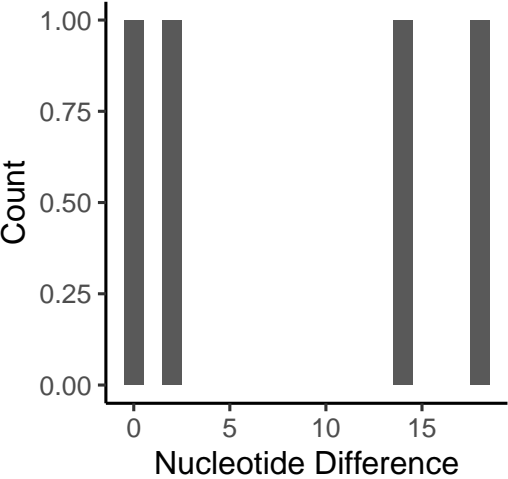
IGHV4-NL_37*01_S0997

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



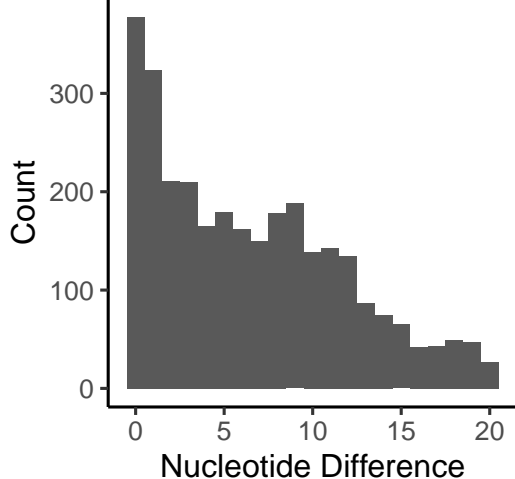
IGHV4-NL_40*01_S9020

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



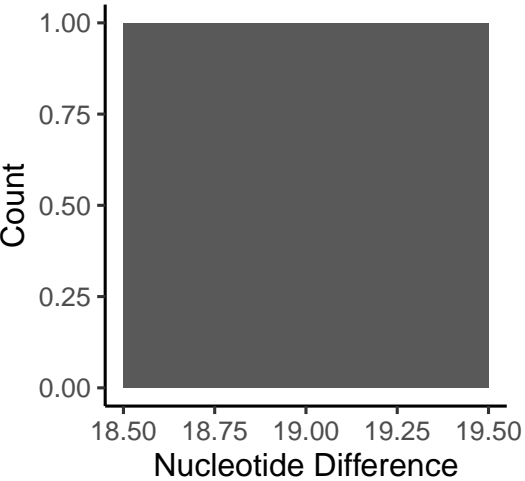
IGHV4-NL_42*01_S8550

3164 sequences assigned
378 (11.9%) exact matches, in which:
312 unique CDR3
8 unique J



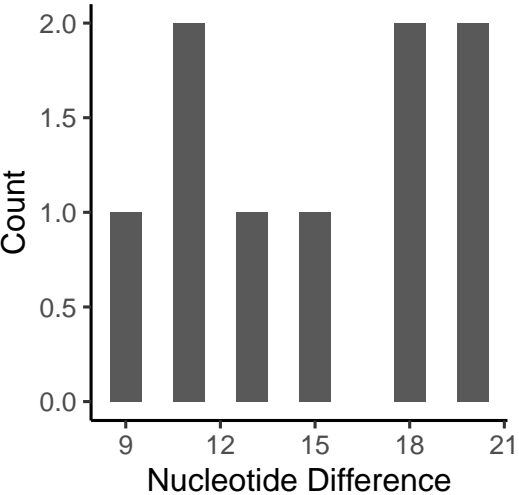
IGHV4-NL_38*01_S8437

2 sequences assigned
No exact matches.



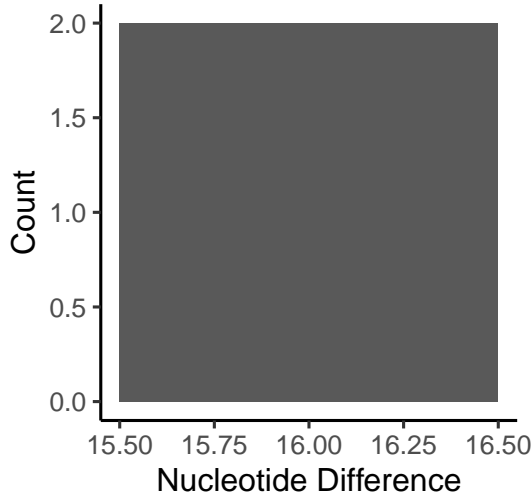
IGHV4-NL_41*01_S6928

16 sequences assigned
No exact matches.



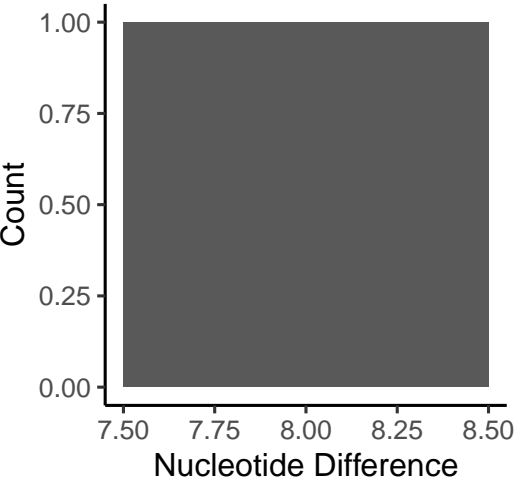
IGHV4-NL_43*01_S3820

4 sequences assigned
No exact matches.



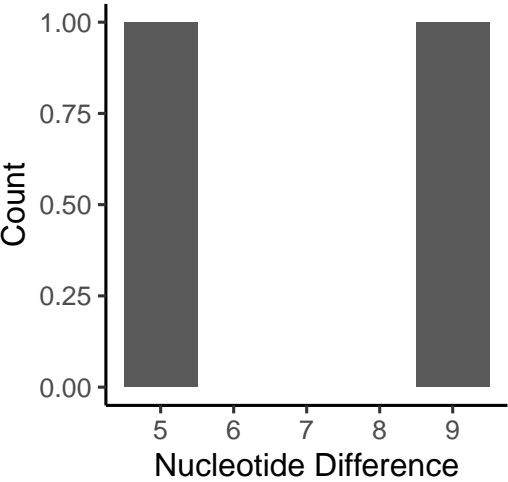
IGHV4-NL_38*01_S9225

5 sequences assigned
No exact matches.



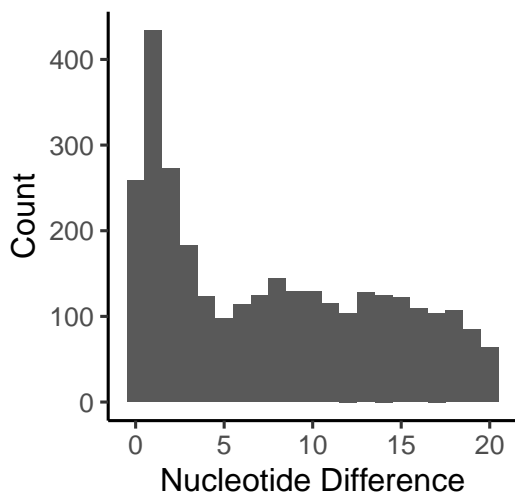
IGHV4-NL_41*01_S9253

3 sequences assigned
No exact matches.



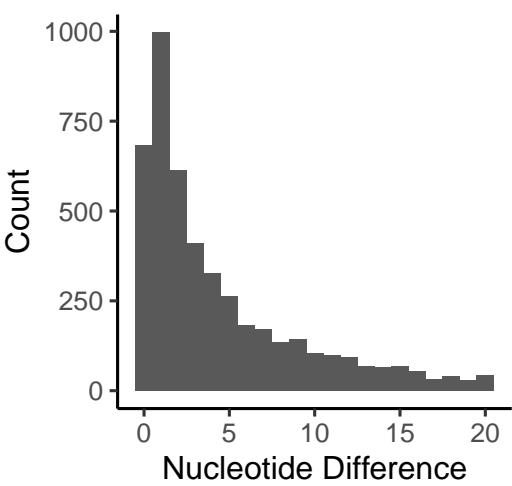
IGHV4-NL_5*01_S0908

3485 sequences assigned
259 (7.4%) exact matches, in which:
240 unique CDR3
7 unique J



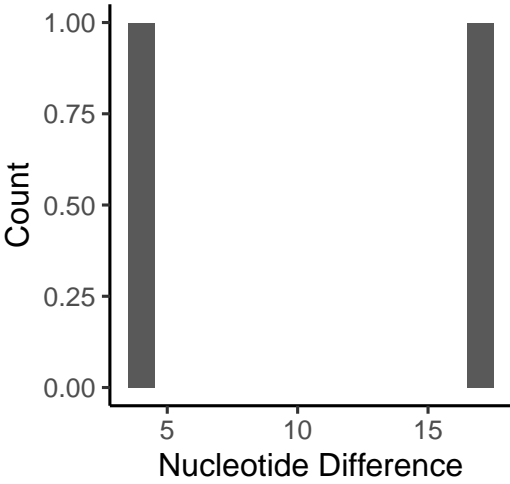
IGHV4–NL_5*01_S6960

4854 sequences assigned
683 (14.1%) exact matches, in which:
595 unique CDR3
8 unique J



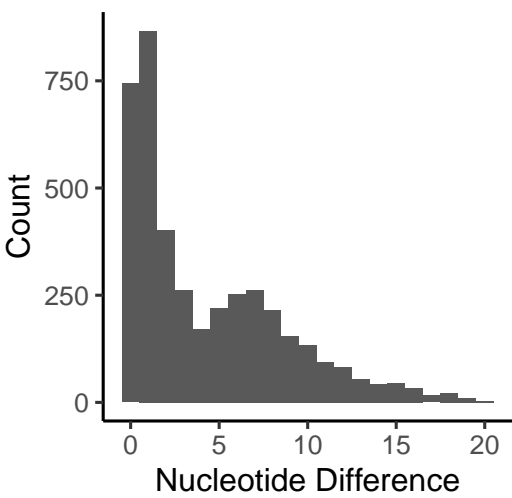
IGHV4–NL_9*01_S6608

2 sequences assigned
No exact matches.



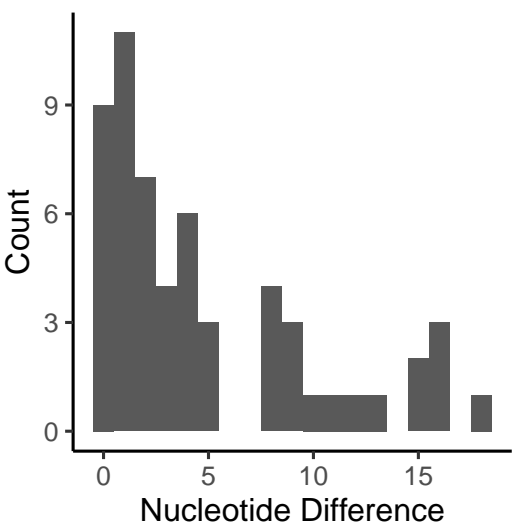
IGHV5–15*01_S8661

4106 sequences assigned
744 (18.1%) exact matches, in which:
527 unique CDR3
7 unique J



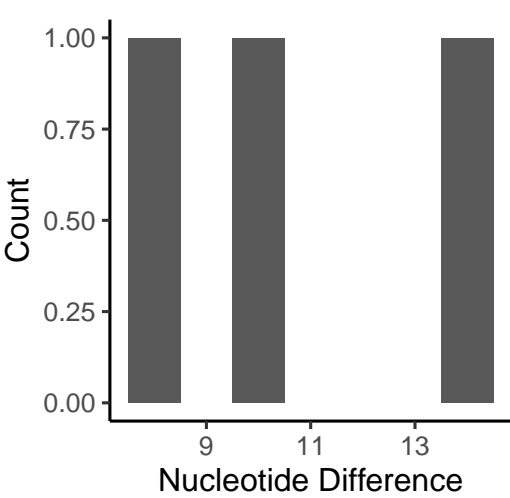
IGHV4–NL_6*01_S3002

58 sequences assigned
9 (15.5%) exact matches, in which:
8 unique CDR3
5 unique J



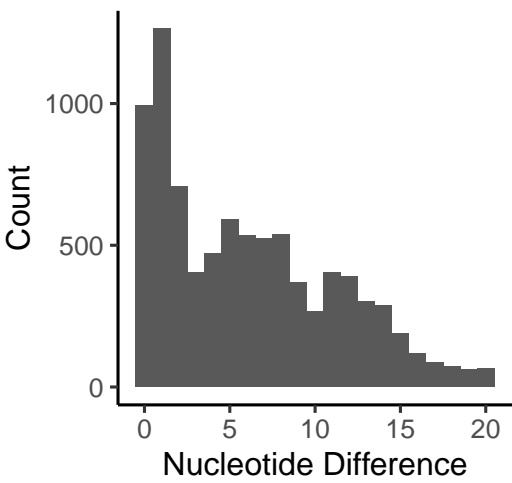
IGHV4–NL_9*02_S2874

3 sequences assigned
No exact matches.



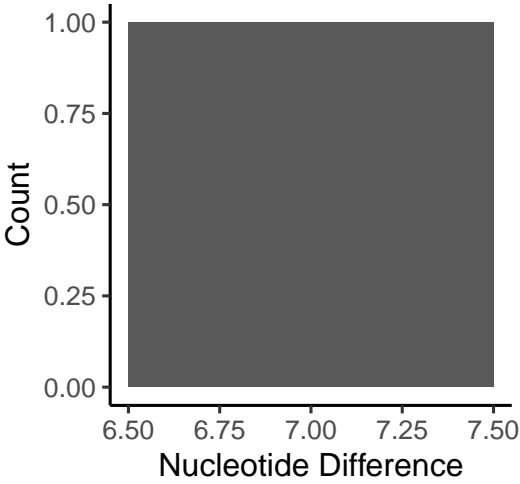
IGHV5–157*02_S3096

8878 sequences assigned
992 (11.2%) exact matches, in which:
642 unique CDR3
8 unique J



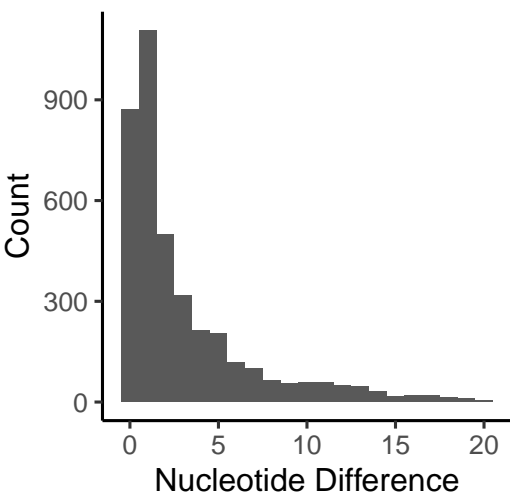
IGHV4–NL_7*02_S8742

1 sequences assigned
No exact matches.



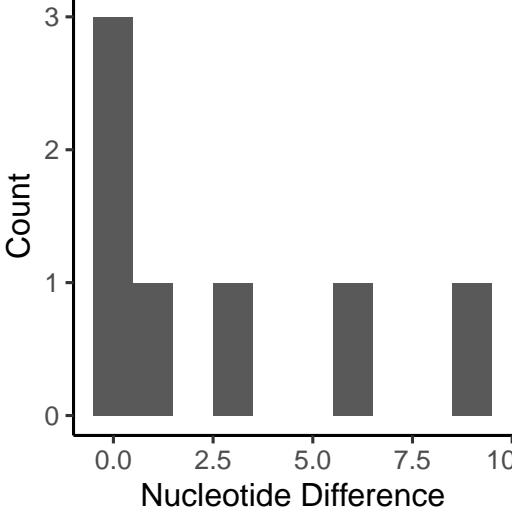
IGHV5–15*01_S0175

3928 sequences assigned
870 (22.1%) exact matches, in which:
602 unique CDR3
8 unique J



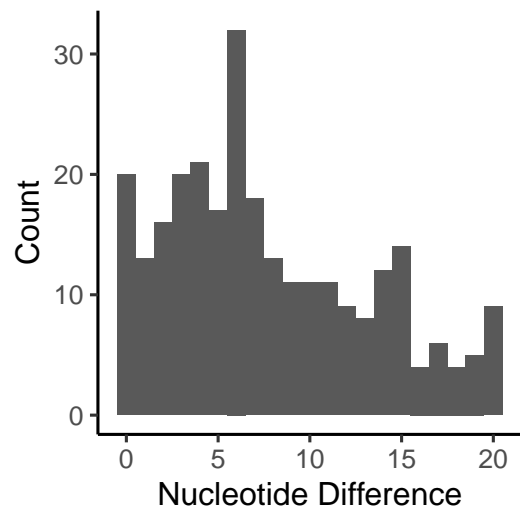
IGHV5–NL_1*02_S5699

7 sequences assigned
3 (42.9%) exact matches, in which:
3 unique CDR3
2 unique J



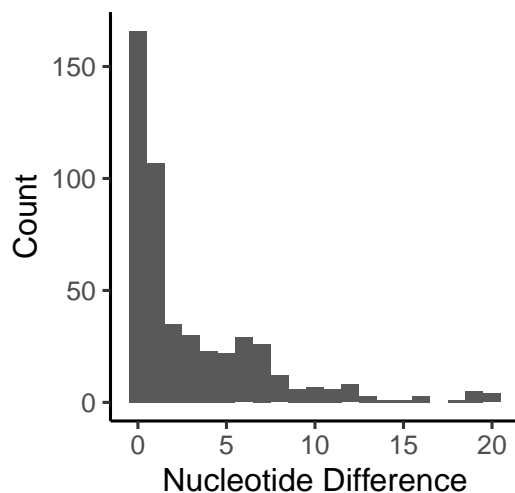
IGHV6-1*02_G283T

291 sequences assigned
20 (6.9%) exact matches, in which:
18 unique CDR3
4 unique J



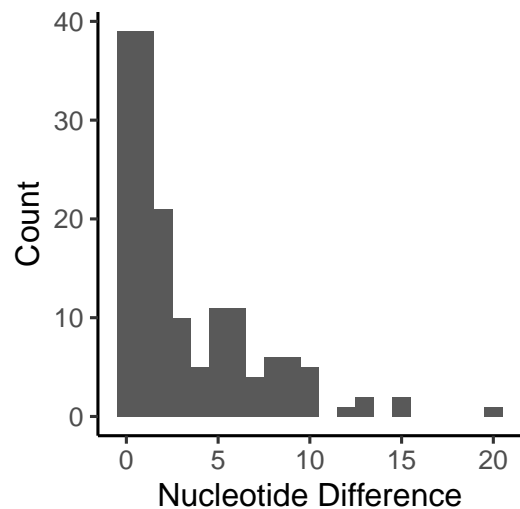
IGHV7-86*02_S1706

566 sequences assigned
166 (29.3%) exact matches, in which:
109 unique CDR3
9 unique J



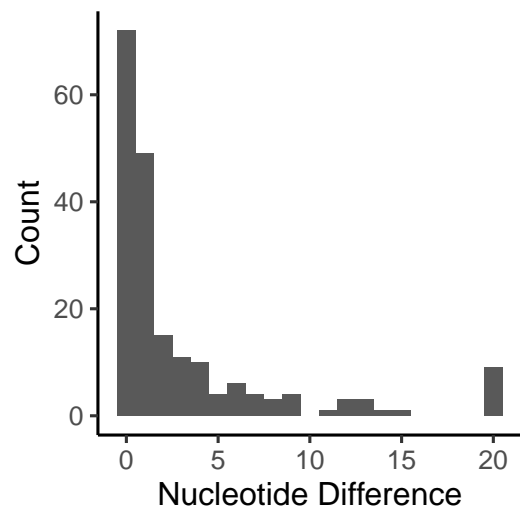
IGHV6-1*02_S6792

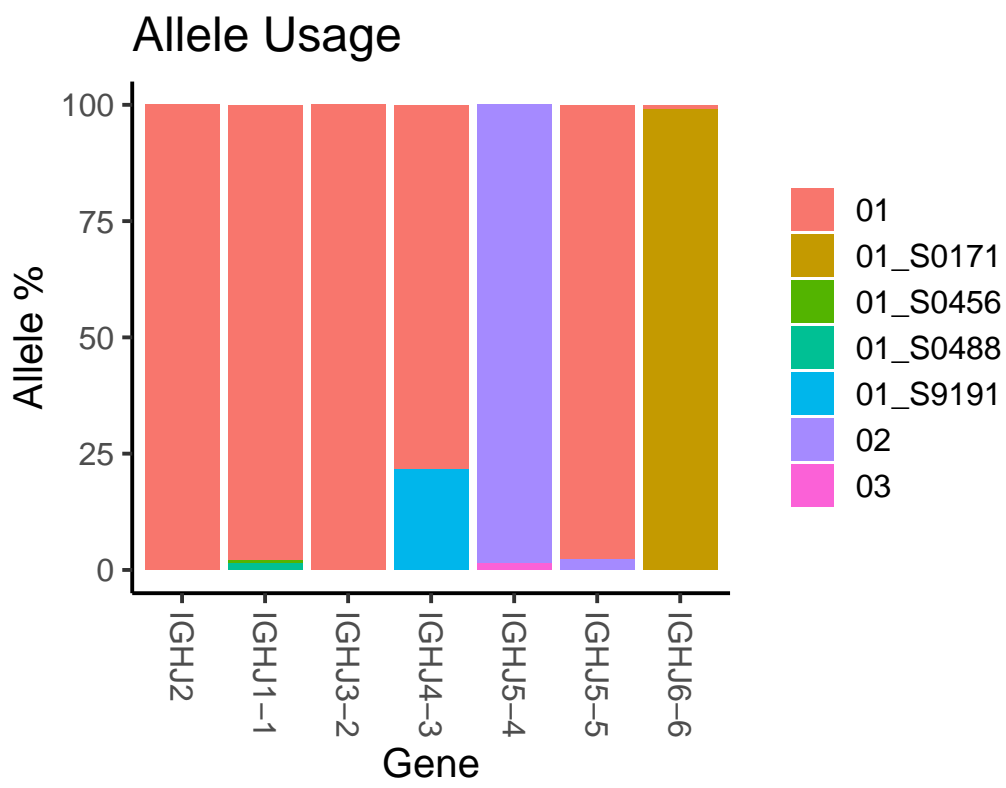
163 sequences assigned
39 (23.9%) exact matches, in which:
26 unique CDR3
6 unique J



IGHV7-86*01_S5062

224 sequences assigned
72 (32.1%) exact matches, in which:
44 unique CDR3
7 unique J





Warning – no inferred sequences found.