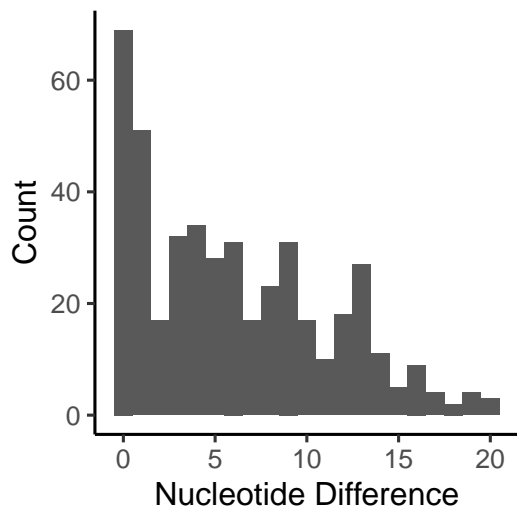


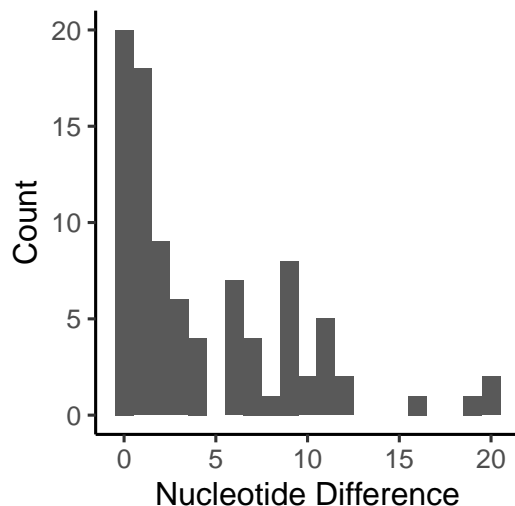
IGHV1-60*01_S7772

517 sequences assigned
69 (13.3%) exact matches, in which:
44 unique CDR3
7 unique J



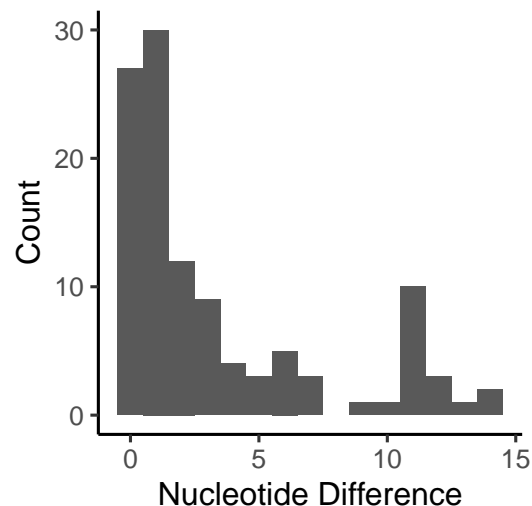
IGHV1-105*01_S8807

93 sequences assigned
20 (21.5%) exact matches, in which:
10 unique CDR3
4 unique J



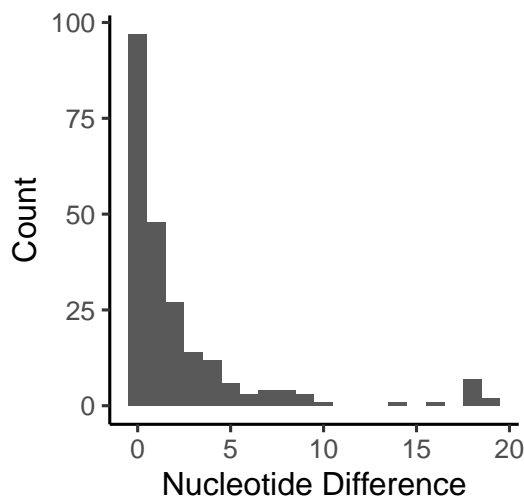
IGHV1-138*01_S8728

114 sequences assigned
27 (23.7%) exact matches, in which:
19 unique CDR3
6 unique J



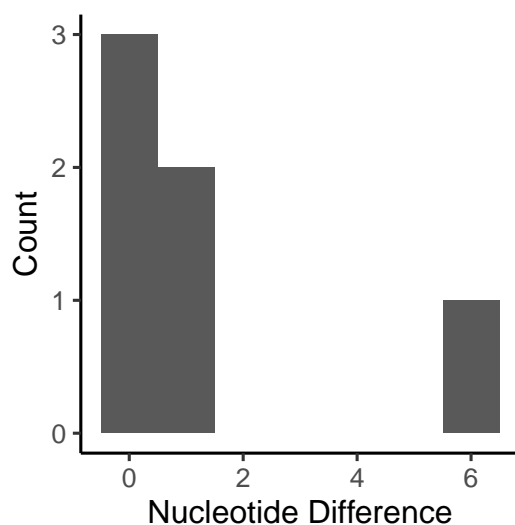
IGHV1-84*01_S2078

231 sequences assigned
97 (42%) exact matches, in which:
50 unique CDR3
8 unique J



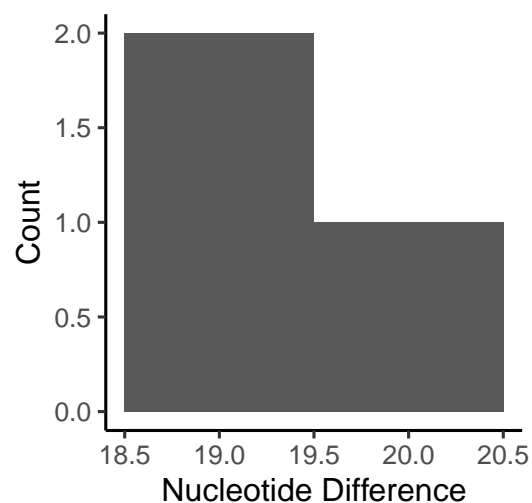
IGHV1-124*01_S1287

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



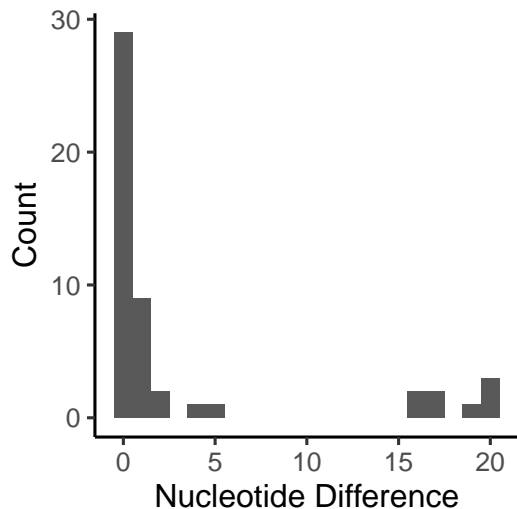
IGHV1-170*01_S3055

5 sequences assigned
No exact matches.



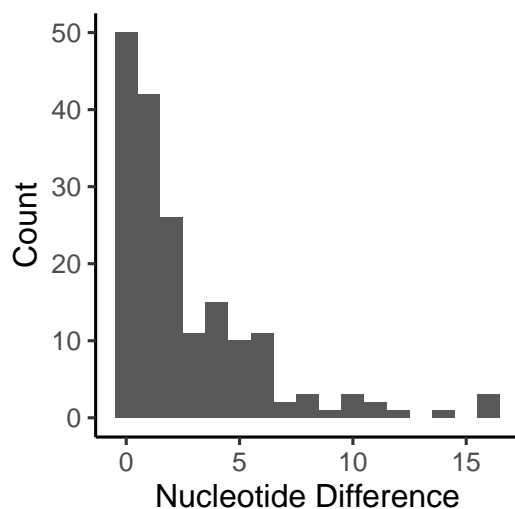
IGHV1-84*01_S9171

51 sequences assigned
29 (56.9%) exact matches, in which:
14 unique CDR3
4 unique J



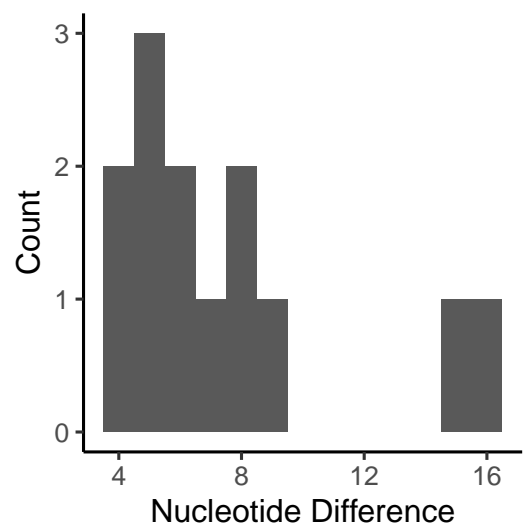
IGHV1-138*01_S0851

195 sequences assigned
50 (25.6%) exact matches, in which:
37 unique CDR3
8 unique J



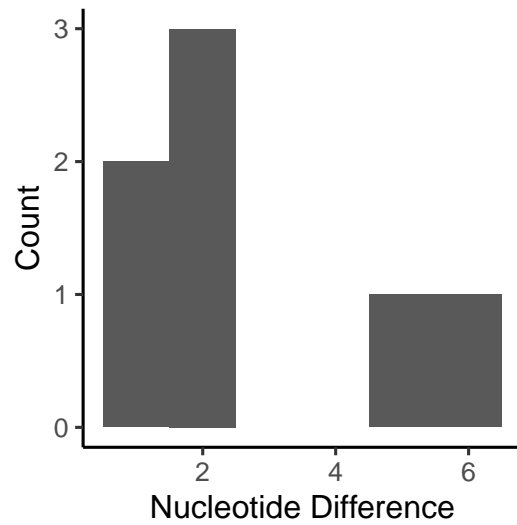
IGHV1-NL_1*01_S5433

14 sequences assigned
No exact matches.



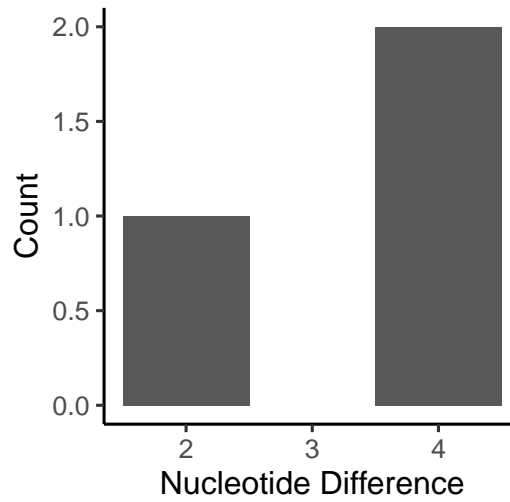
IGHV1–NL_2*01_S1258

7 sequences assigned
No exact matches.



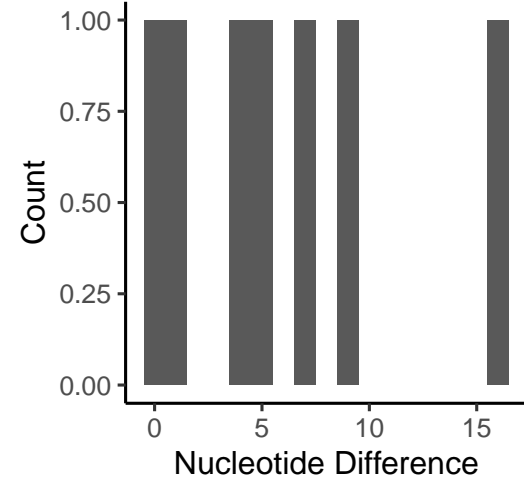
IGHV2–7*02_S4285

4 sequences assigned
No exact matches.



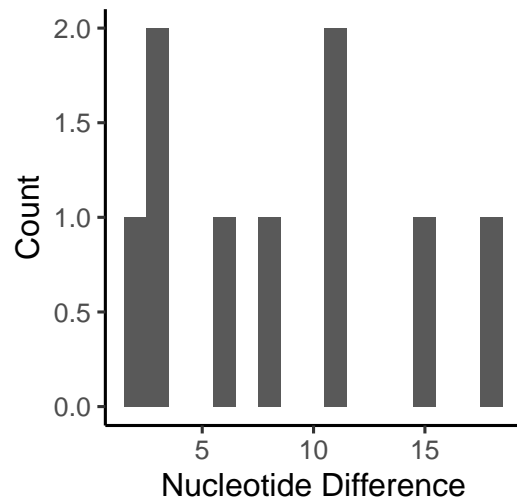
IGHV2–118*01_S8501

8 sequences assigned
1 (12.5%) exact matches, in which:
1 unique CDR3
1 unique J



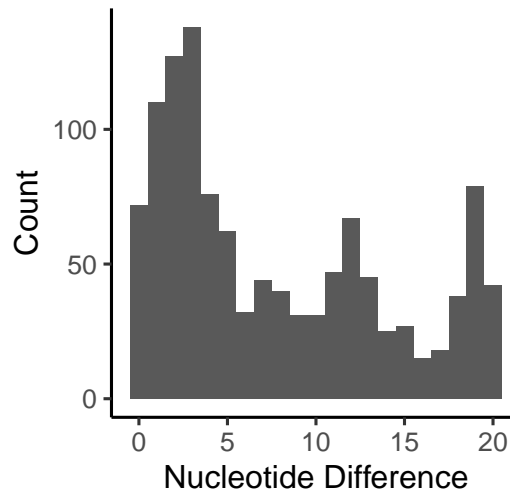
IGHV1–NL_2*01_S6034

9 sequences assigned
No exact matches.



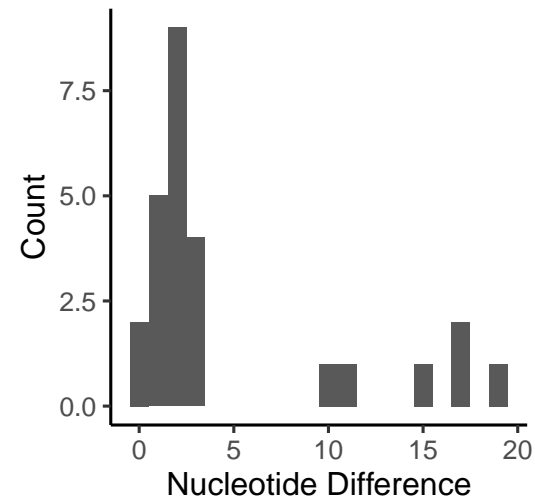
IGHV2–69*01_S5453

1264 sequences assigned
72 (5.7%) exact matches, in which:
49 unique CDR3
6 unique J



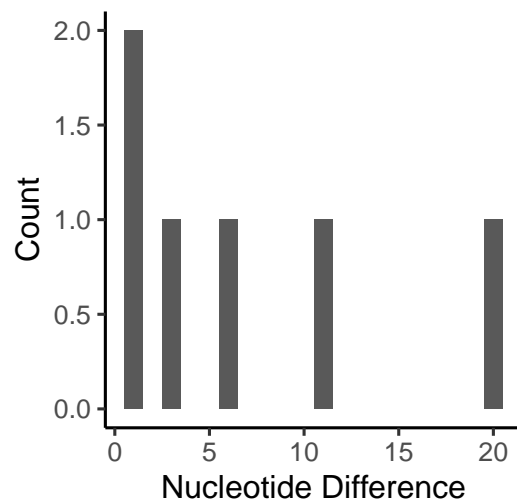
IGHV2–173*01_S2781

54 sequences assigned
2 (3.7%) exact matches, in which:
2 unique CDR3
2 unique J



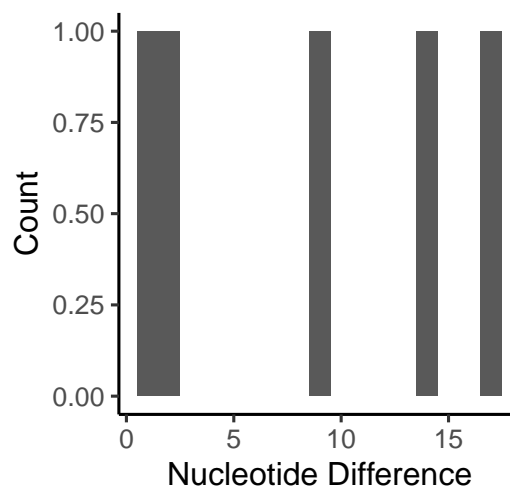
IGHV2–7*02_S1732

6 sequences assigned
No exact matches.



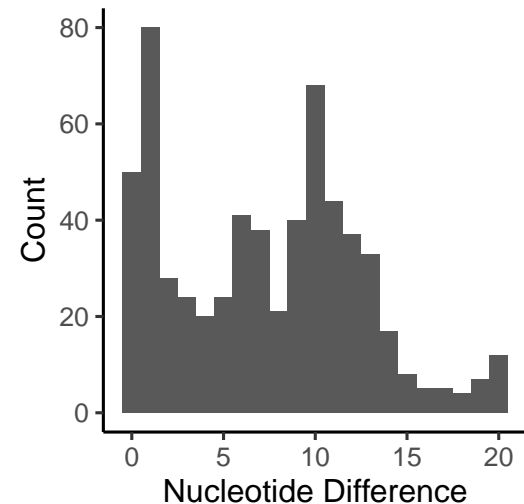
IGHV2–118*01_S4632

5 sequences assigned
No exact matches.



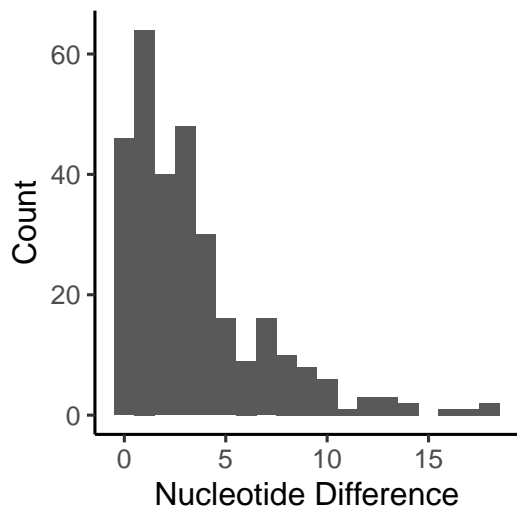
IGHV2–NL_1*01_S9848

648 sequences assigned
50 (7.7%) exact matches, in which:
37 unique CDR3
7 unique J



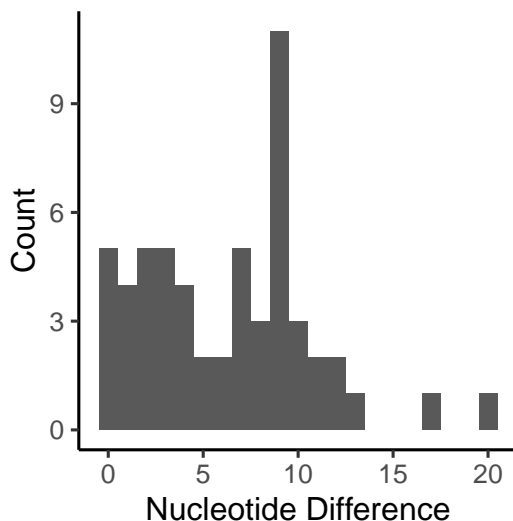
IGHV2–NL_2*01_S8873

307 sequences assigned
46 (15%) exact matches, in which:
27 unique CDR3
6 unique J



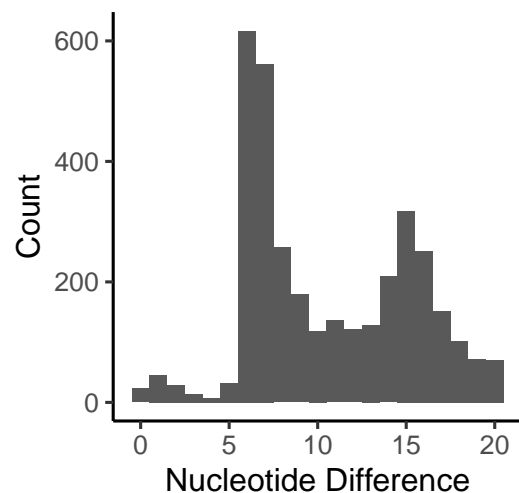
IGHV3–36*01_S4906

57 sequences assigned
5 (8.8%) exact matches, in which:
5 unique CDR3
2 unique J



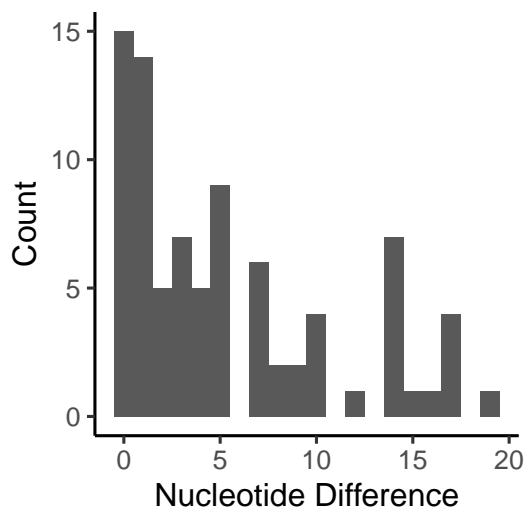
IGHV3–50*01_S8530_C1

4385 sequences assigned
23 (0.5%) exact matches, in which:
18 unique CDR3
3 unique J



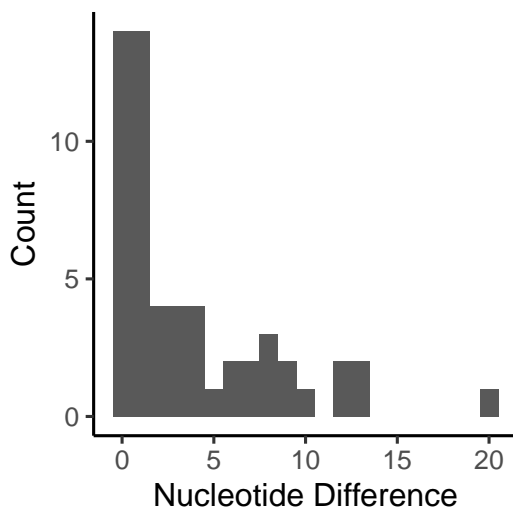
IGHV3–9*01_S8777

88 sequences assigned
15 (17%) exact matches, in which:
11 unique CDR3
5 unique J



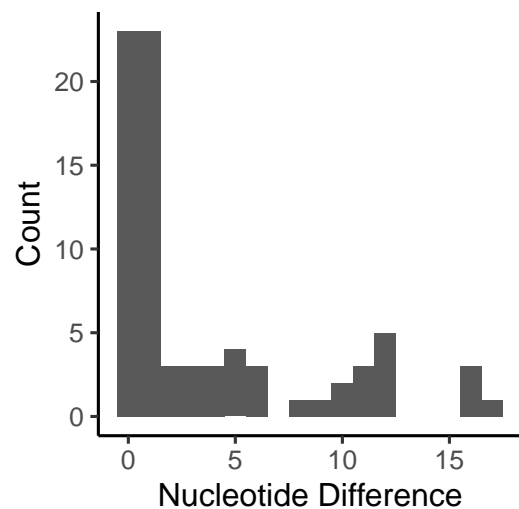
IGHV3–36*01_S5206

62 sequences assigned
14 (22.6%) exact matches, in which:
12 unique CDR3
4 unique J



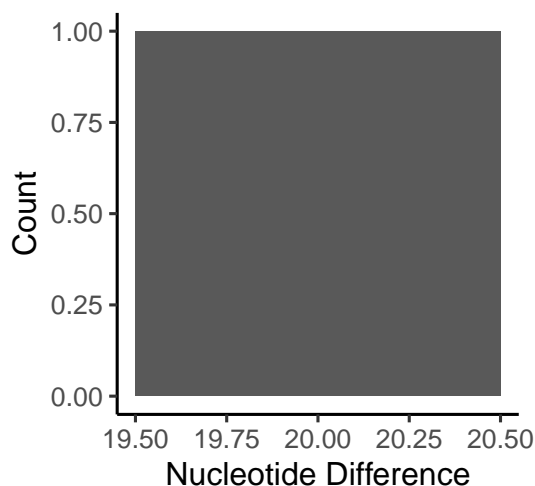
IGHV3–52*02_S4087

86 sequences assigned
23 (26.7%) exact matches, in which:
13 unique CDR3
3 unique J



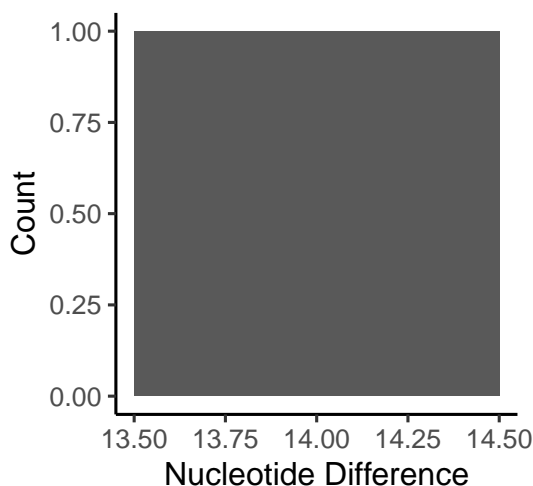
IGHV3–28*01_S7540

2 sequences assigned
No exact matches.



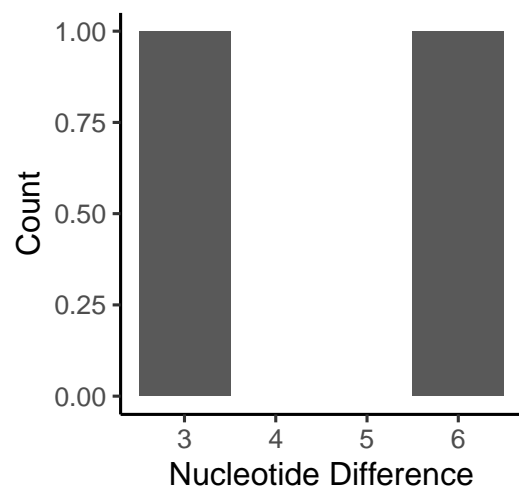
IGHV3–37*01_S4016

2 sequences assigned
No exact matches.



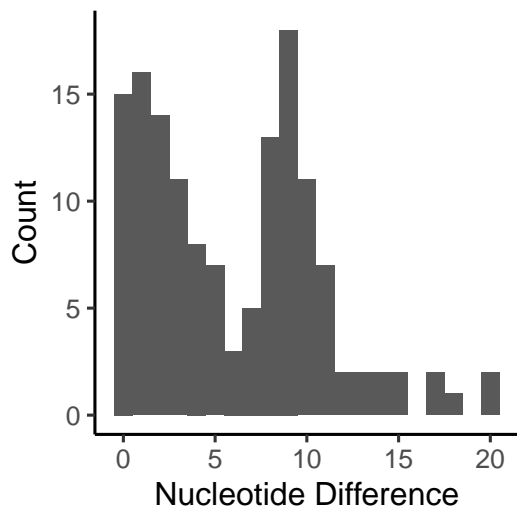
IGHV3–53*01_S2905

43 sequences assigned
No exact matches.



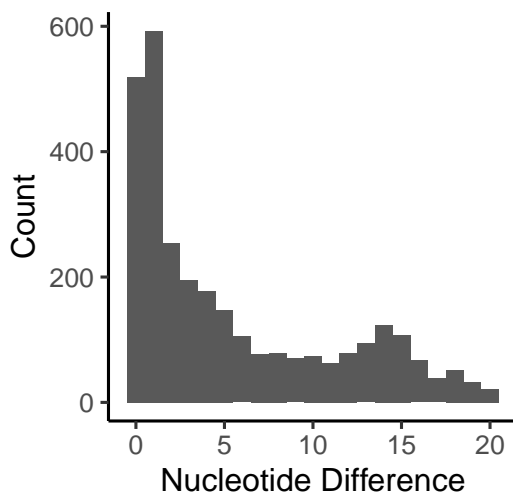
IGHV3-53*01_S6933

156 sequences assigned
15 (9.6%) exact matches, in which:
12 unique CDR3
2 unique J



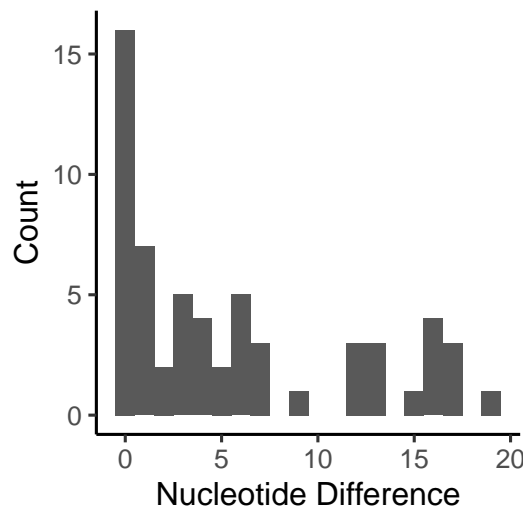
IGHV3-76*02_S4190

3220 sequences assigned
519 (16.1%) exact matches, in which:
357 unique CDR3
10 unique J



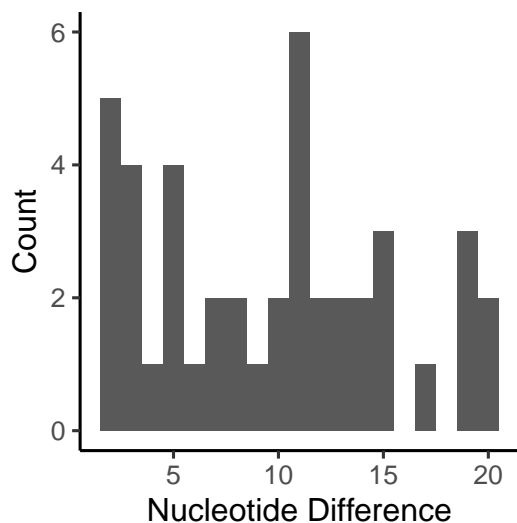
IGHV3-87*01_S5669

62 sequences assigned
16 (25.8%) exact matches, in which:
15 unique CDR3
6 unique J



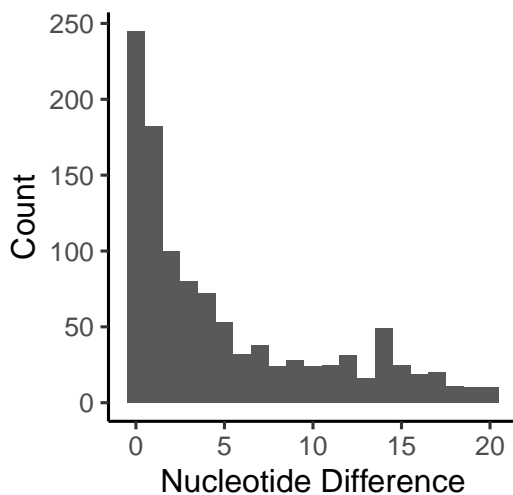
IGHV3-73*01_S9948

54 sequences assigned
No exact matches.



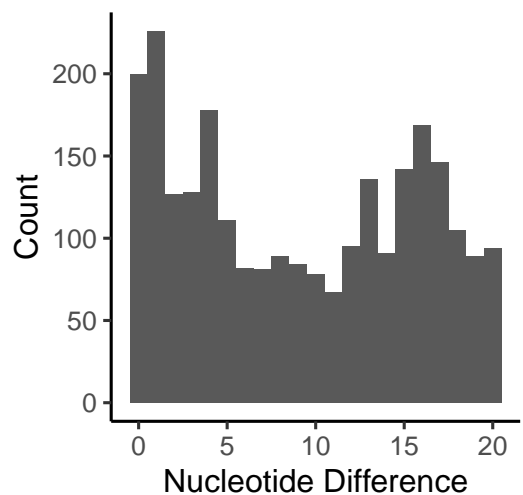
IGHV3-76*02_S4190_A2

1188 sequences assigned
245 (20.6%) exact matches, in which:
213 unique CDR3
8 unique J



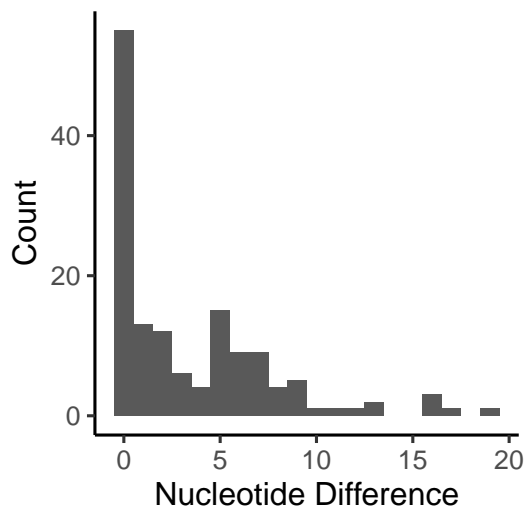
IGHV3-88*01_S3750

3112 sequences assigned
200 (6.4%) exact matches, in which:
139 unique CDR3
8 unique J



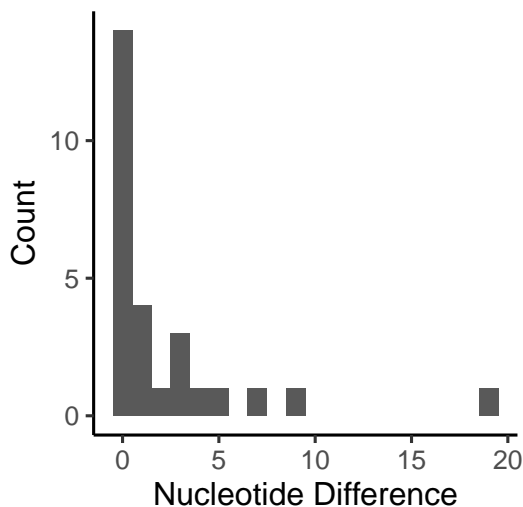
IGHV3-73*02_S5005

145 sequences assigned
55 (37.9%) exact matches, in which:
40 unique CDR3
6 unique J



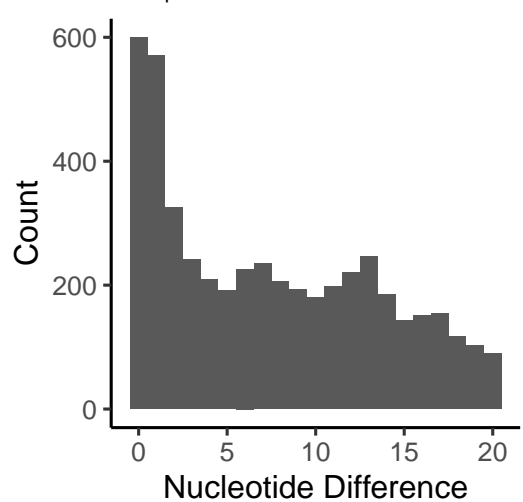
IGHV3-83*02_S1476

27 sequences assigned
14 (51.9%) exact matches, in which:
13 unique CDR3
5 unique J



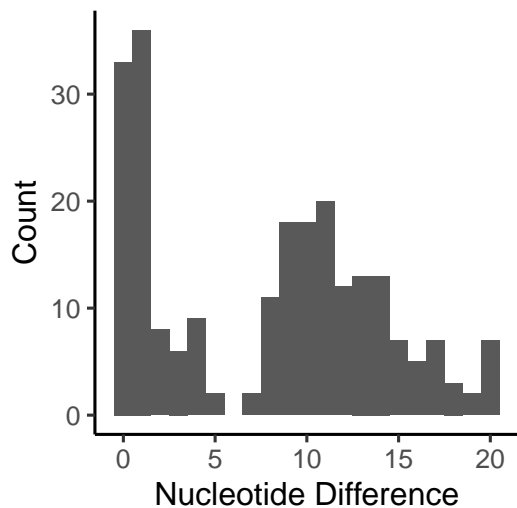
IGHV3-88*01_S6871

5652 sequences assigned
600 (10.6%) exact matches, in which:
260 unique CDR3
8 unique J



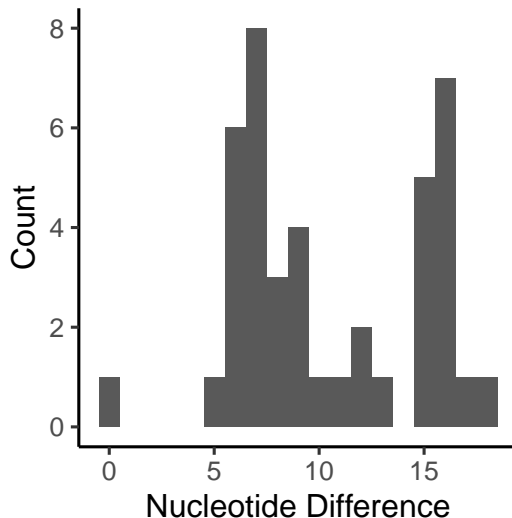
IGHV3-94*01_S9358

309 sequences assigned
33 (10.7%) exact matches, in which:
26 unique CDR3
6 unique J



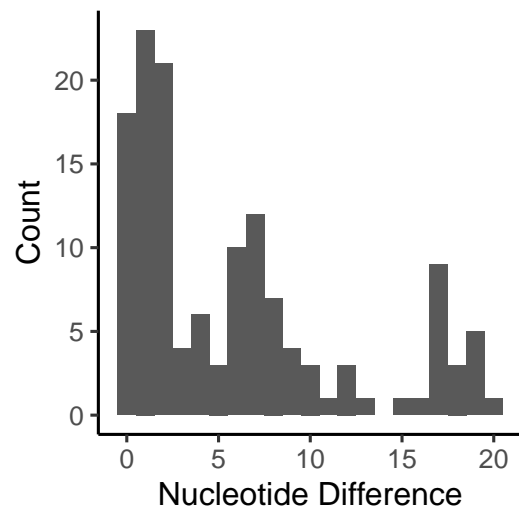
IGHV3-120*01_S7674

45 sequences assigned
1 (2.2%) exact matches, in which:
1 unique CDR3
0 unique J



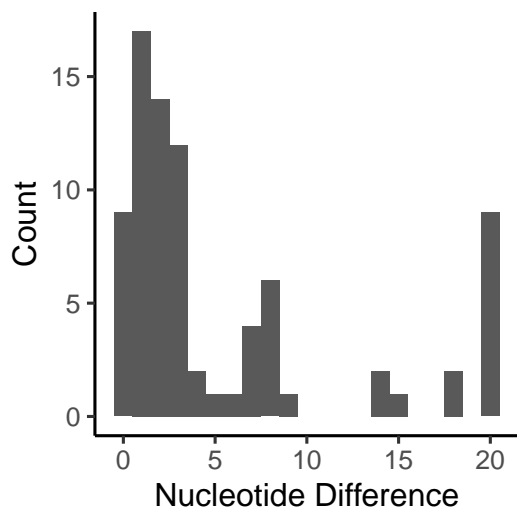
IGHV3-127*01_S7059

162 sequences assigned
18 (11.1%) exact matches, in which:
12 unique CDR3
3 unique J



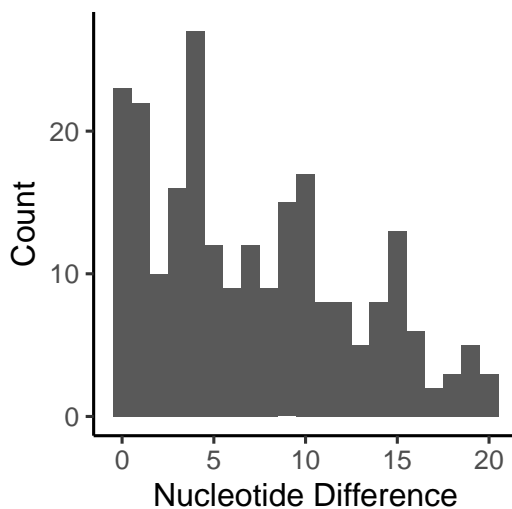
IGHV3-100*01_S8172

148 sequences assigned
9 (6.1%) exact matches, in which:
7 unique CDR3
5 unique J



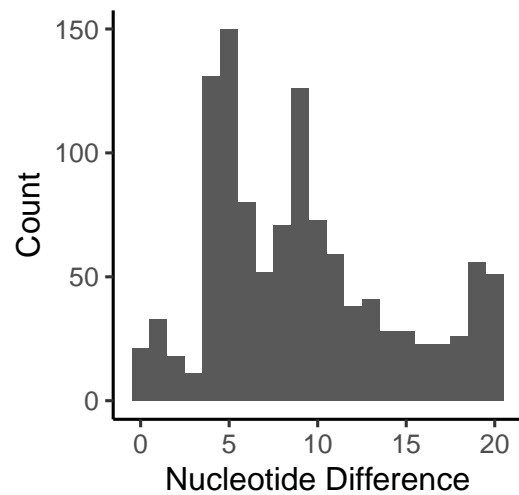
IGHV3-122*01_S8501

272 sequences assigned
23 (8.5%) exact matches, in which:
15 unique CDR3
5 unique J



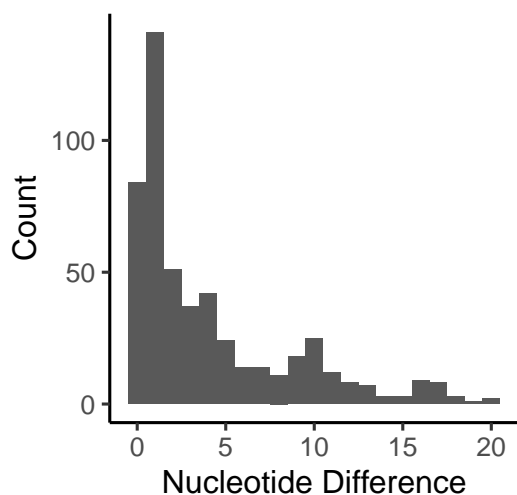
IGHV3-128*02_S4192

1452 sequences assigned
21 (1.4%) exact matches, in which:
15 unique CDR3
4 unique J



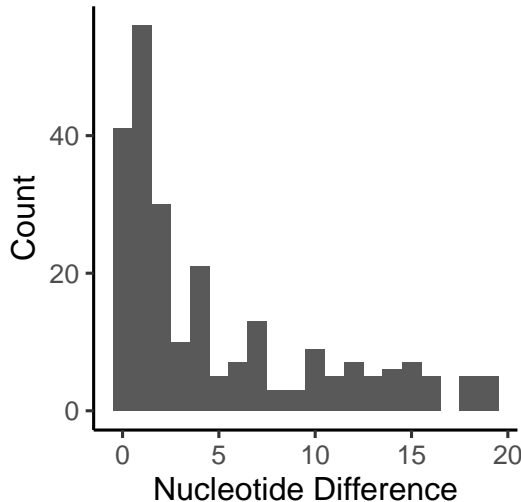
IGHV3-103*01_S9382

528 sequences assigned
84 (15.9%) exact matches, in which:
54 unique CDR3
7 unique J



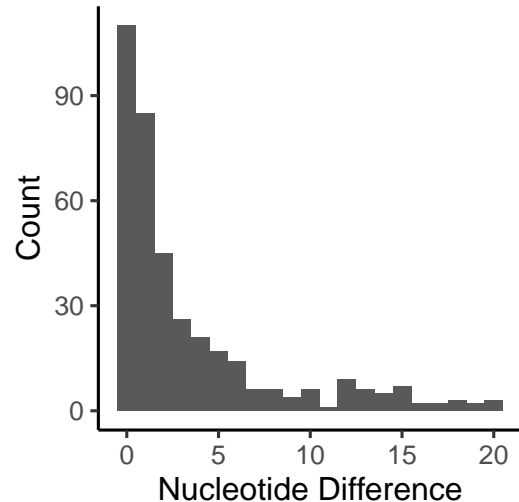
IGHV3-127*01_S5510

255 sequences assigned
41 (16.1%) exact matches, in which:
25 unique CDR3
5 unique J



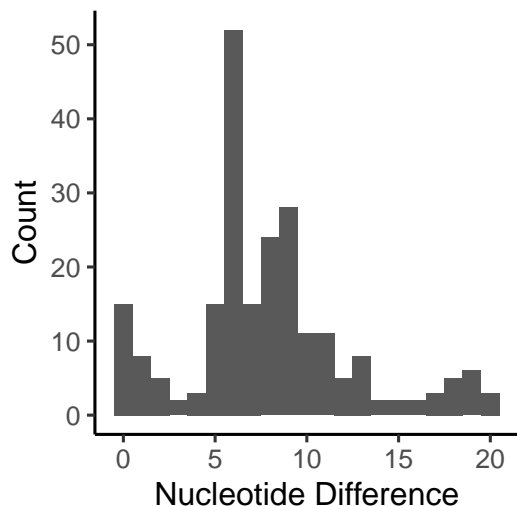
IGHV3-141*01_S2819

385 sequences assigned
110 (28.6%) exact matches, in which:
91 unique CDR3
7 unique J



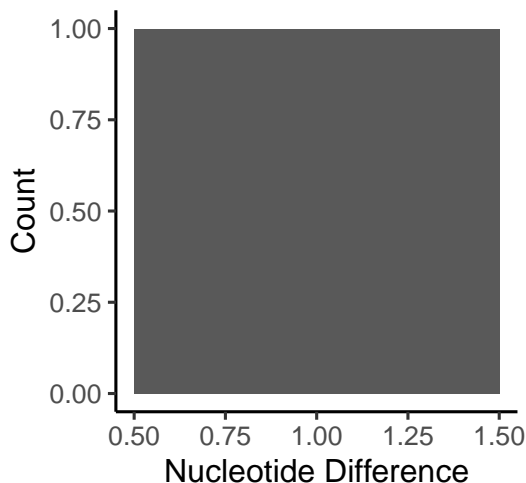
IGHV3-141*02_S7574

238 sequences assigned
15 (6.3%) exact matches, in which:
13 unique CDR3
5 unique J



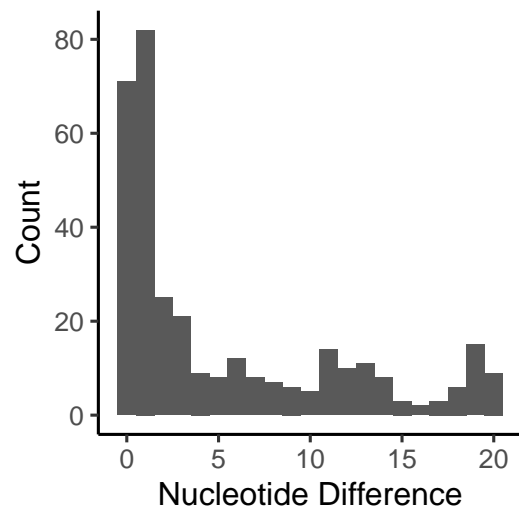
IGHV3-152*01_S8754

1 sequences assigned
No exact matches.



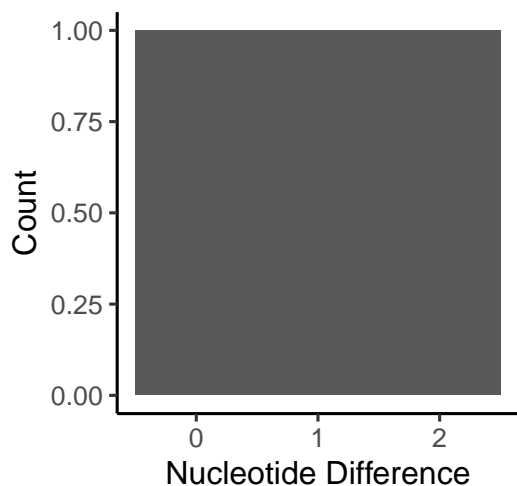
IGHV3-177*01_S8409

398 sequences assigned
71 (17.8%) exact matches, in which:
59 unique CDR3
7 unique J



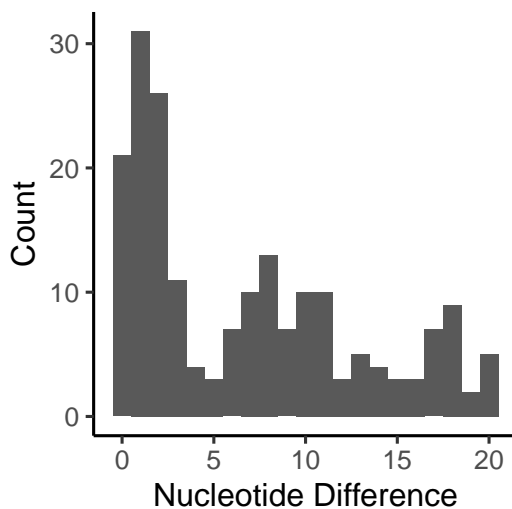
IGHV3-143*01_S1151

7 sequences assigned
1 (14.3%) exact matches, in which:
1 unique CDR3
0 unique J



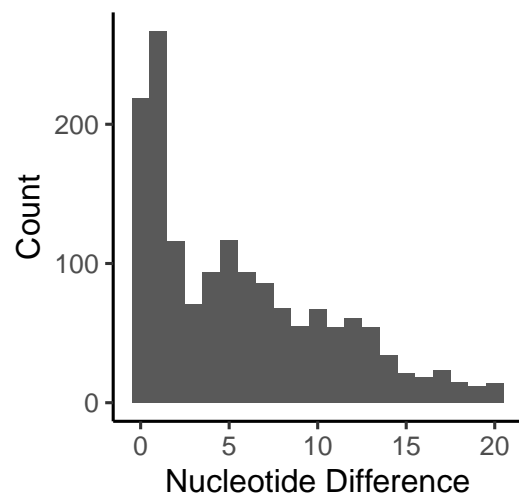
IGHV3-172*01_S8488

415 sequences assigned
21 (5.1%) exact matches, in which:
15 unique CDR3
6 unique J



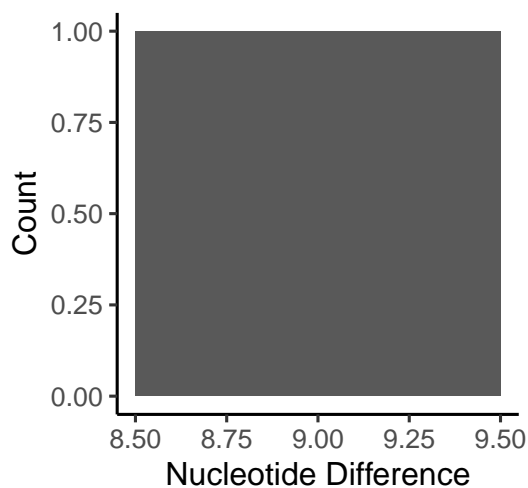
IGHV3-187*01_S2144

1822 sequences assigned
219 (12%) exact matches, in which:
137 unique CDR3
8 unique J



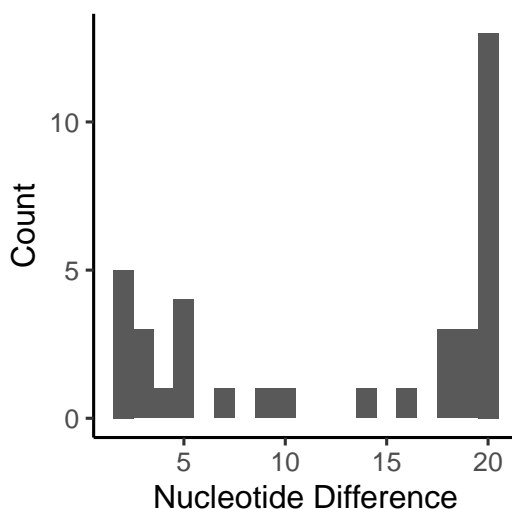
IGHV3-152*01_S7388

1 sequences assigned
No exact matches.



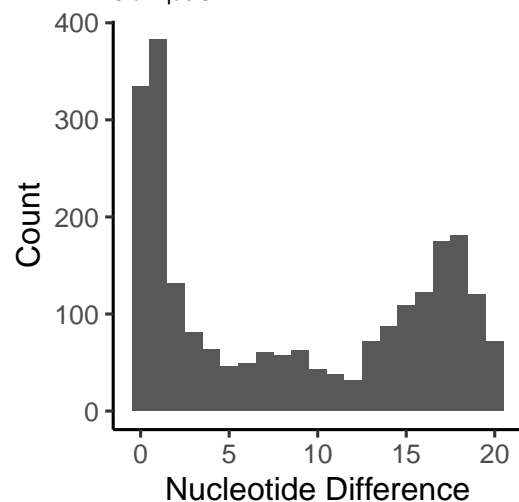
IGHV3-177*01_S2755

87 sequences assigned
No exact matches.



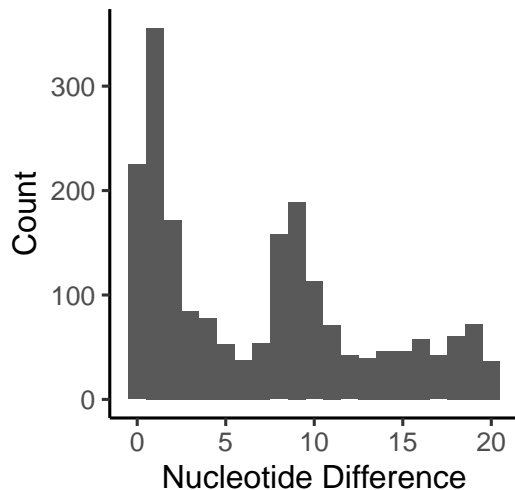
IGHV3-187*01_S3225

2902 sequences assigned
334 (11.5%) exact matches, in which:
221 unique CDR3
9 unique J



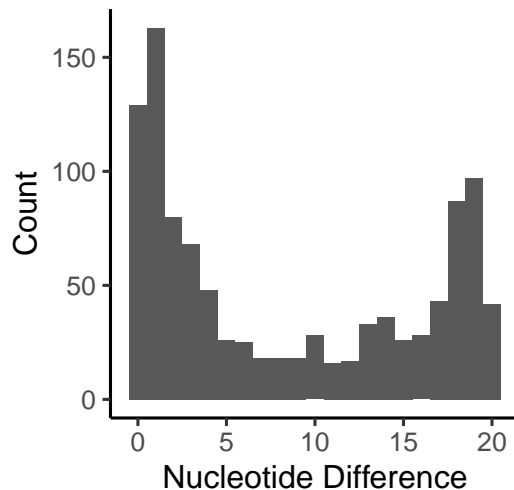
IGHV3–NL_1*01_S1263

2342 sequences assigned
225 (9.6%) exact matches, in which:
155 unique CDR3
9 unique J



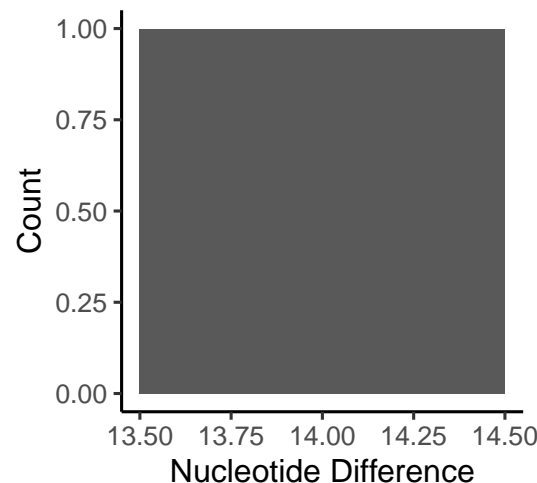
IGHV3–NL_11*01_S5714

1563 sequences assigned
129 (8.3%) exact matches, in which:
99 unique CDR3
9 unique J



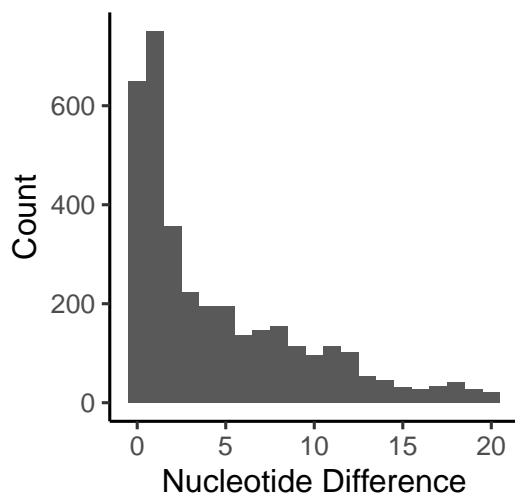
IGHV3–NL_14*01_S0414

1 sequences assigned
No exact matches.



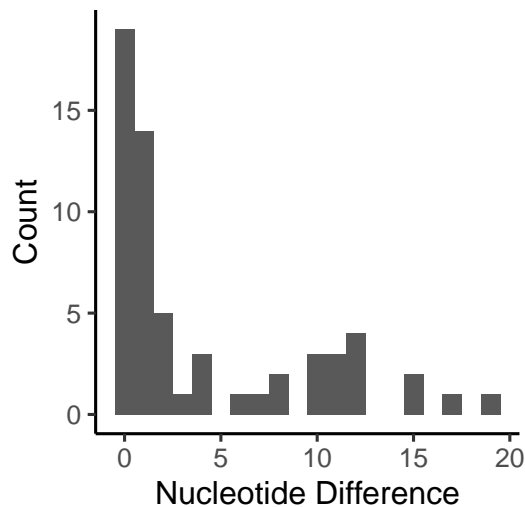
IGHV3–NL_1*01_S8831

3940 sequences assigned
649 (16.5%) exact matches, in which:
431 unique CDR3
9 unique J



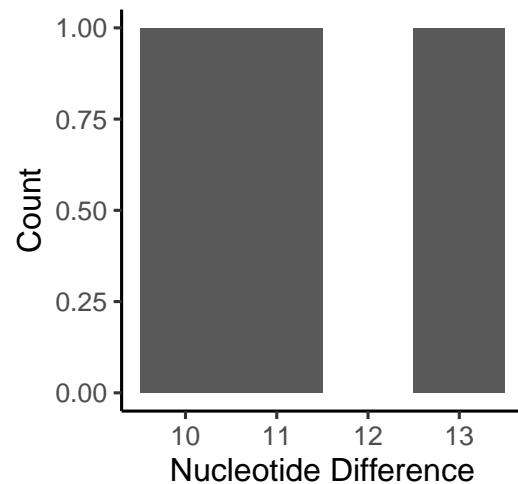
IGHV3–NL_12*02_S0206

62 sequences assigned
19 (30.6%) exact matches, in which:
14 unique CDR3
3 unique J



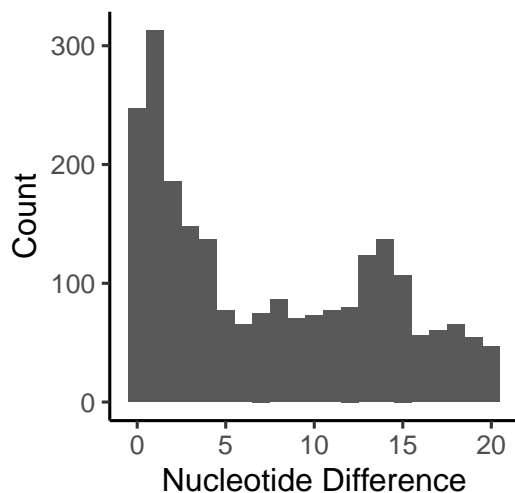
IGHV3–NL_14*01_S6089

3 sequences assigned
No exact matches.



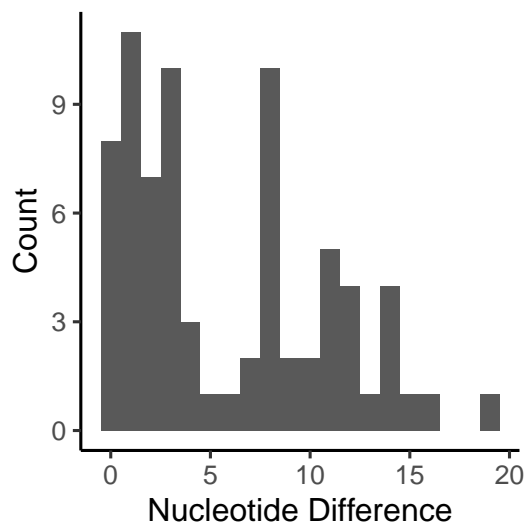
IGHV3–NL_10*02_S3155

2741 sequences assigned
247 (9%) exact matches, in which:
177 unique CDR3
9 unique J



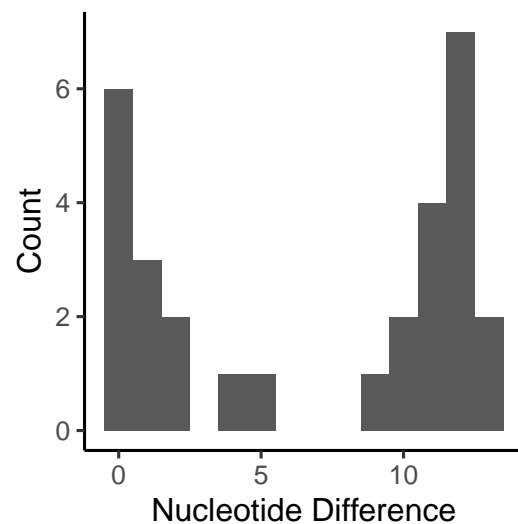
IGHV3–NL_13*01_S6424

78 sequences assigned
8 (10.3%) exact matches, in which:
4 unique CDR3
2 unique J



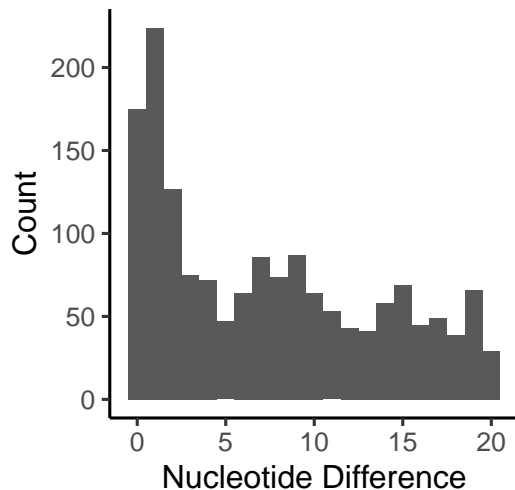
IGHV3–NL_16*01_S4017

34 sequences assigned
6 (17.6%) exact matches, in which:
5 unique CDR3
2 unique J



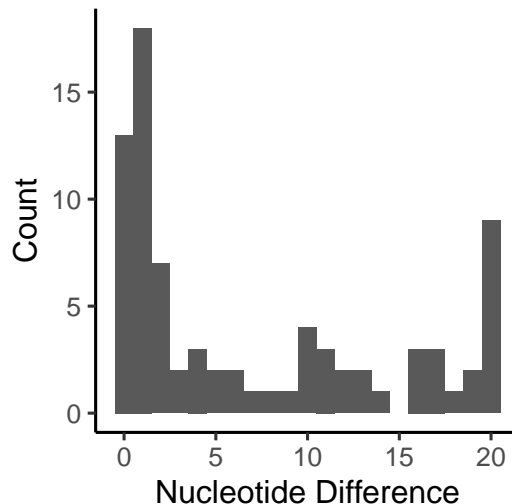
IGHV3–NL_17*01_S0121

1876 sequences assigned
175 (9.3%) exact matches, in which:
113 unique CDR3
7 unique J



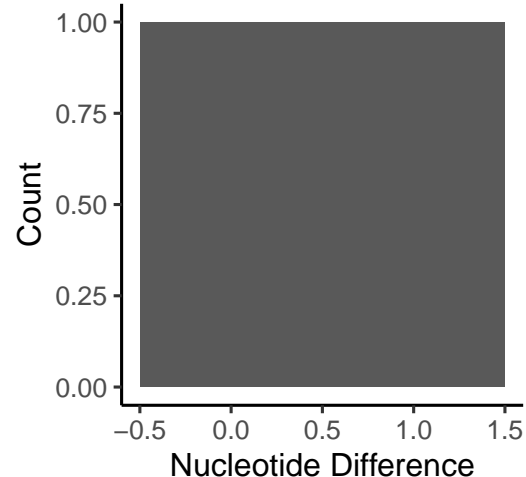
IGHV3–NL_2*01_S4683

113 sequences assigned
13 (11.5%) exact matches, in which:
11 unique CDR3
4 unique J



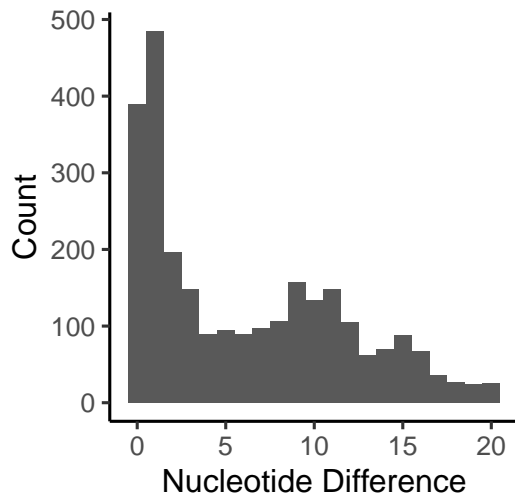
IGHV3–NL_5*01_S3315

3 sequences assigned
1 (33.3%) exact matches, in which:
1 unique CDR3
1 unique J



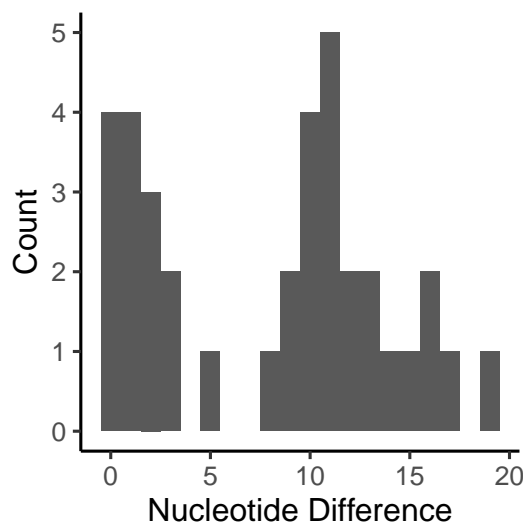
IGHV3–NL_17*01_S4250

2927 sequences assigned
389 (13.3%) exact matches, in which:
288 unique CDR3
10 unique J



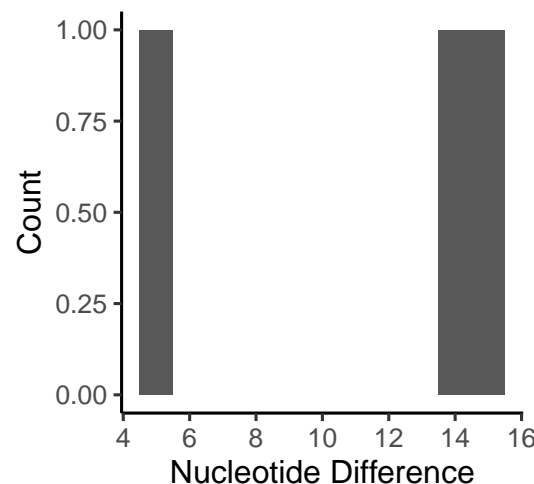
IGHV3–NL_2*01_S6231

38 sequences assigned
4 (10.5%) exact matches, in which:
3 unique CDR3
3 unique J



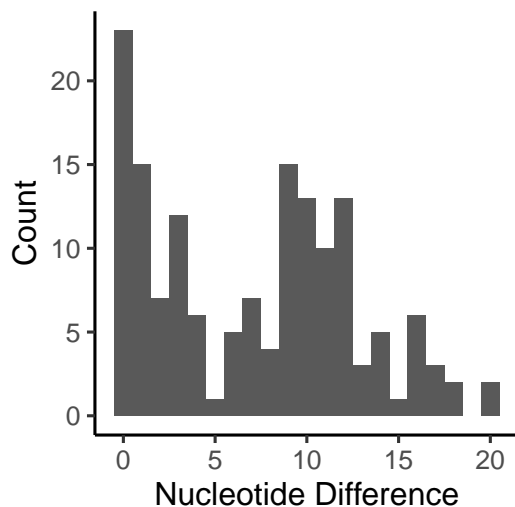
IGHV3–NL_5*01_S7761

4 sequences assigned
No exact matches.



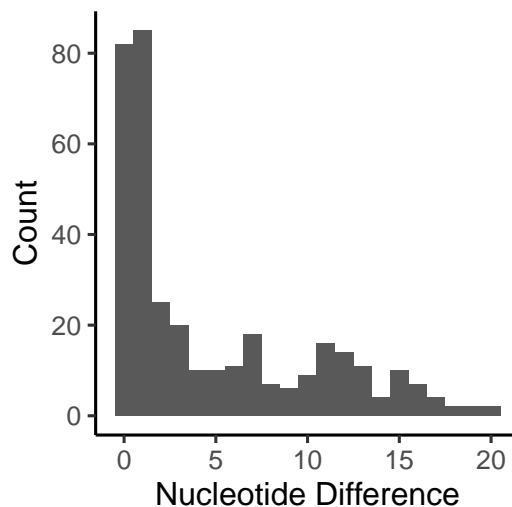
IGHV3–NL_19*01_S8136

166 sequences assigned
23 (13.9%) exact matches, in which:
18 unique CDR3
5 unique J



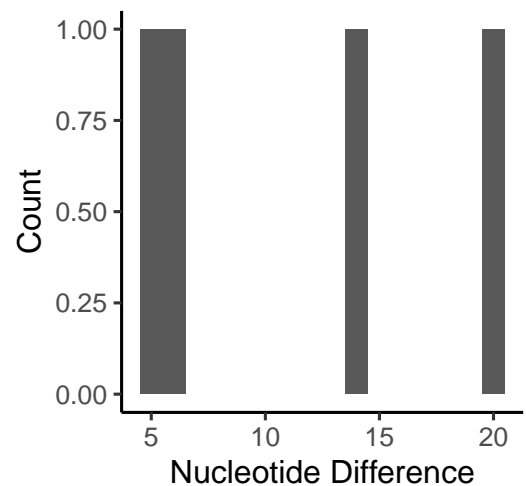
IGHV3–NL_4*01_S9635

368 sequences assigned
82 (22.3%) exact matches, in which:
51 unique CDR3
6 unique J



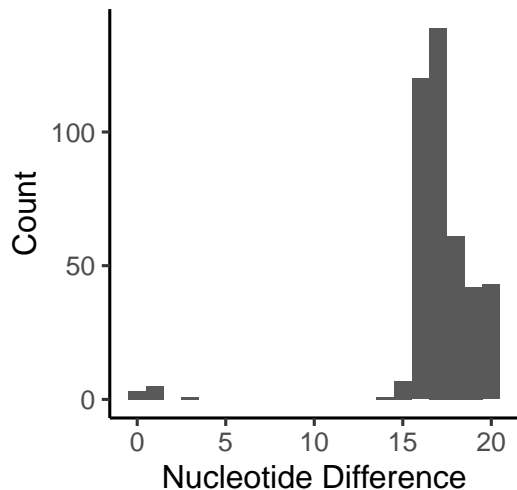
IGHV3–NL_6*02_S6474

10 sequences assigned
No exact matches.



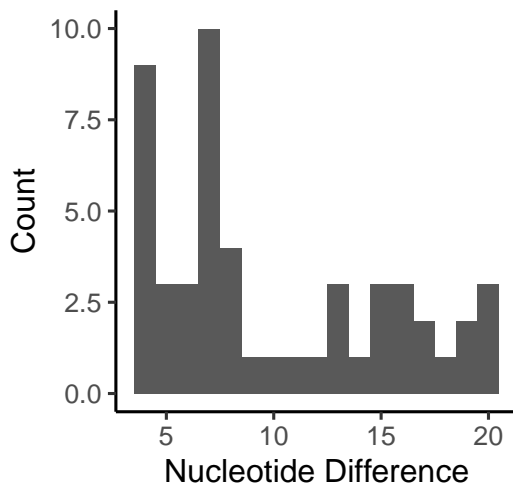
IGHV3–NL_8*01_S9584

725 sequences assigned
3 (0.4%) exact matches, in which:
3 unique CDR3
2 unique J



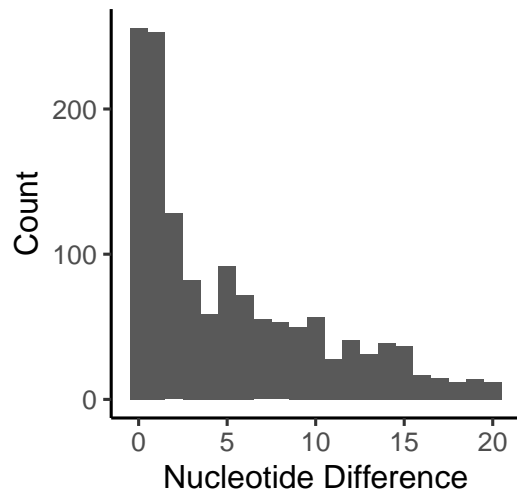
IGHV4–67*02_S1312

169 sequences assigned
No exact matches.



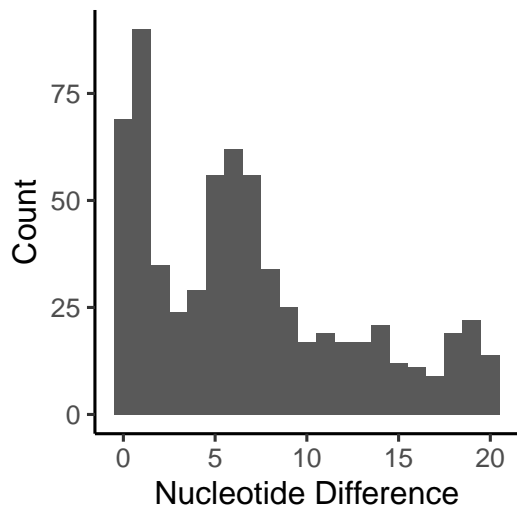
IGHV4–93*01_S1164

1653 sequences assigned
256 (15.5%) exact matches, in which:
205 unique CDR3
7 unique J



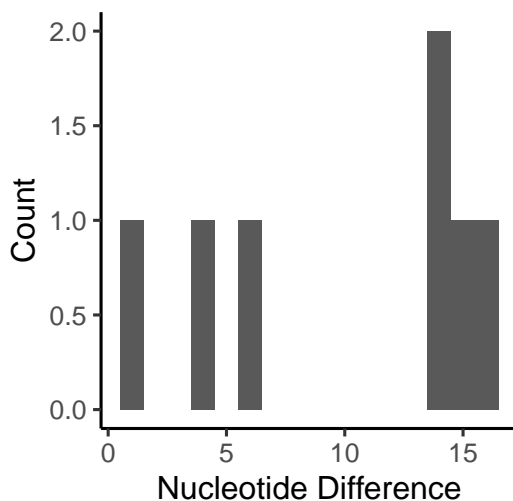
IGHV3–NL_9*01_S1652

693 sequences assigned
69 (10%) exact matches, in which:
47 unique CDR3
6 unique J



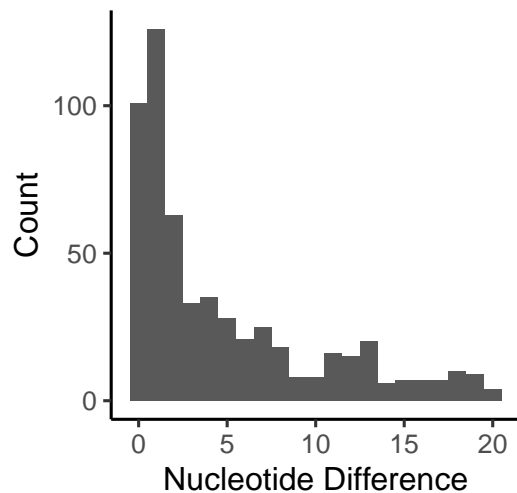
IGHV4–67*02_S4494

15 sequences assigned
No exact matches.



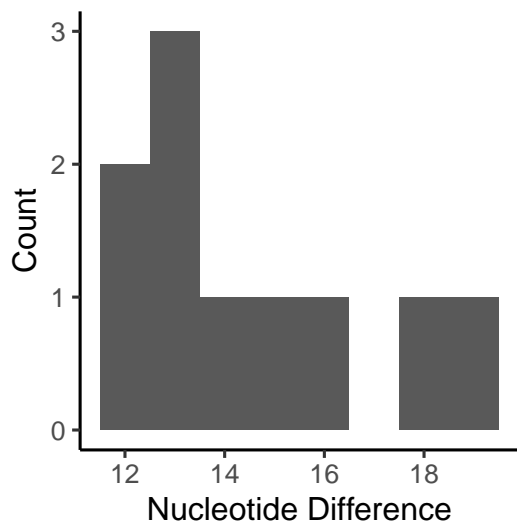
IGHV4–117*01_S0068

770 sequences assigned
101 (13.1%) exact matches, in which:
86 unique CDR3
7 unique J



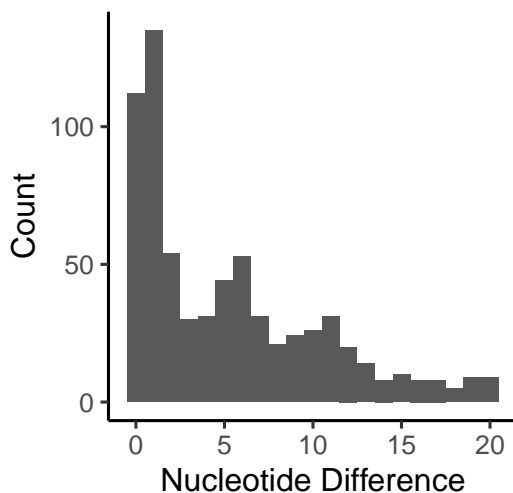
IGHV4–67*01_S6570

59 sequences assigned
No exact matches.



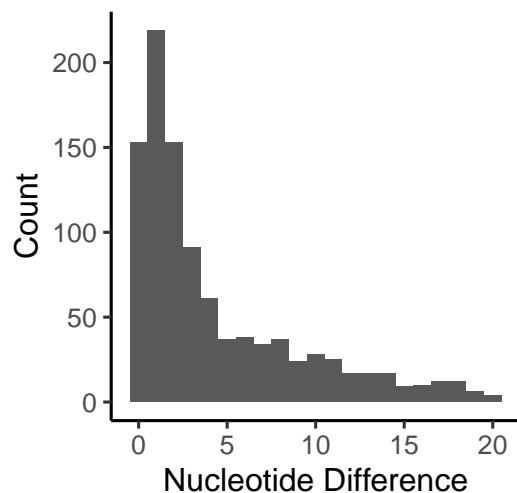
IGHV4–72*01_S8261

789 sequences assigned
112 (14.2%) exact matches, in which:
87 unique CDR3
8 unique J



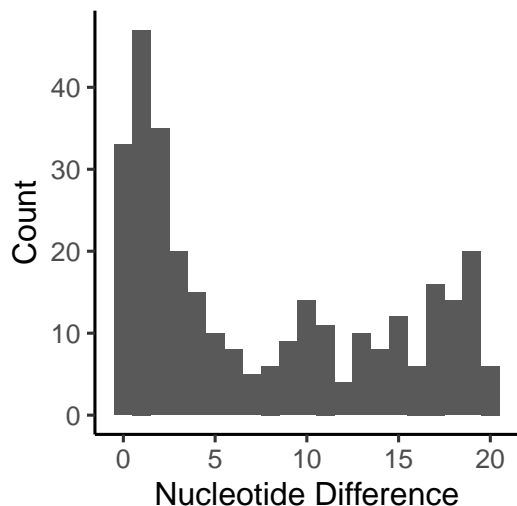
IGHV4–117*01_S0406

1084 sequences assigned
153 (14.1%) exact matches, in which:
133 unique CDR3
7 unique J



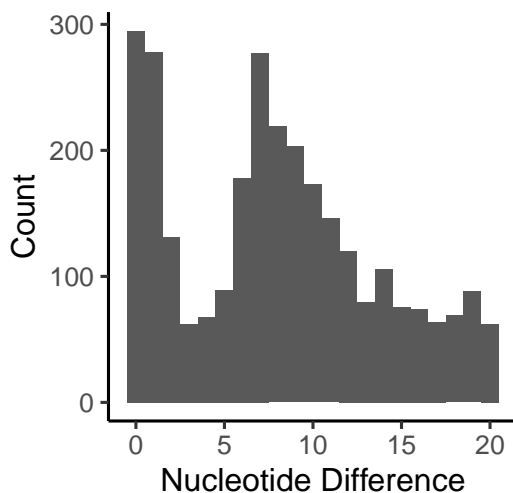
IGHV4-117*01_S8168

358 sequences assigned
33 (9.2%) exact matches, in which:
28 unique CDR3
6 unique J



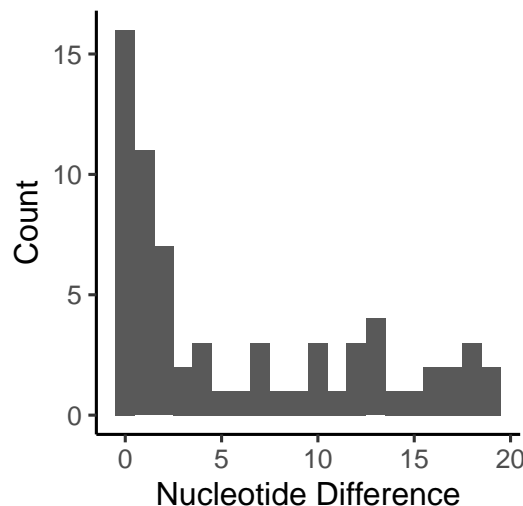
IGHV4-149*01_S1992

3837 sequences assigned
295 (7.7%) exact matches, in which:
237 unique CDR3
7 unique J



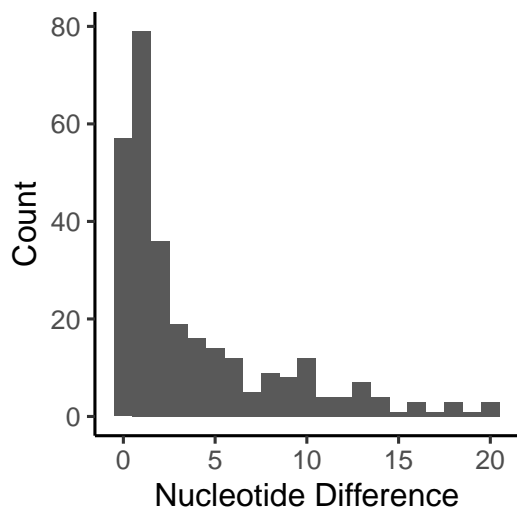
IGHV4-174*02_S5700

75 sequences assigned
16 (21.3%) exact matches, in which:
13 unique CDR3
3 unique J



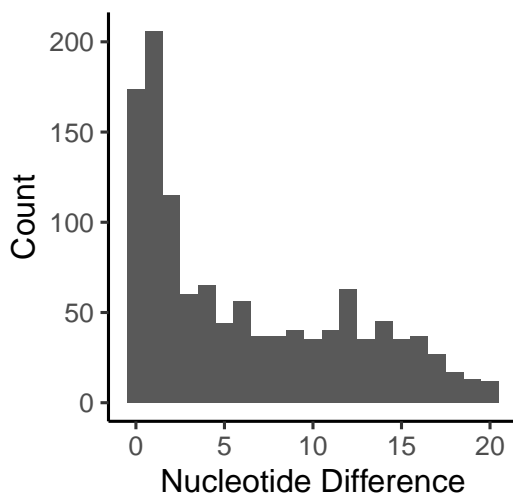
IGHV4-144*01_S6192

351 sequences assigned
57 (16.2%) exact matches, in which:
47 unique CDR3
6 unique J



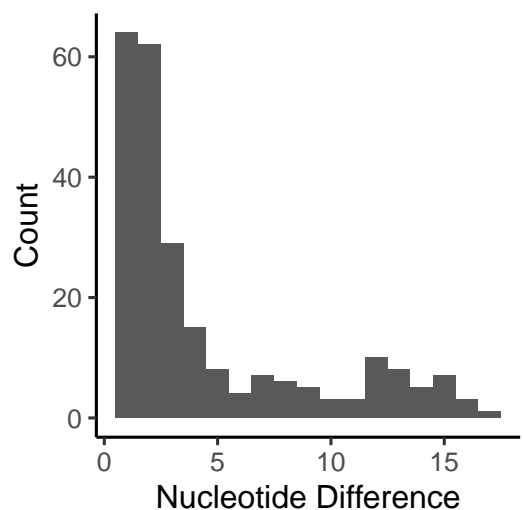
IGHV4-150*01_S0928

1373 sequences assigned
174 (12.7%) exact matches, in which:
145 unique CDR3
9 unique J



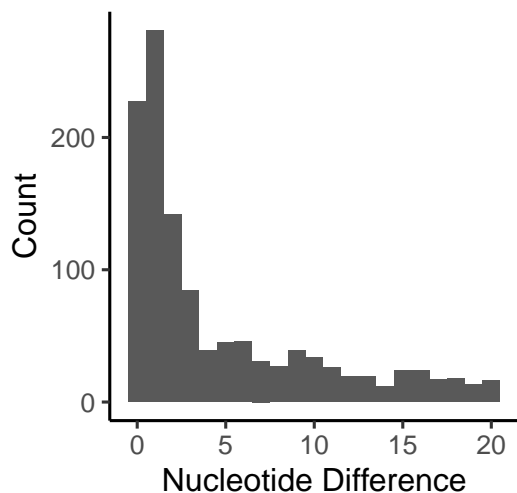
IGHV4-NL_1*01_S4841

262 sequences assigned
No exact matches.



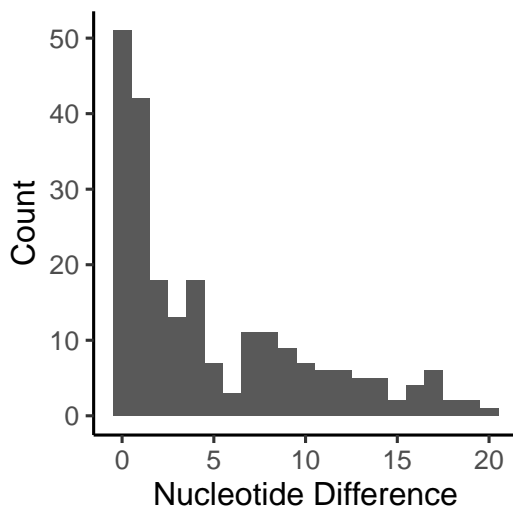
IGHV4-144*01_S8596

1312 sequences assigned
227 (17.3%) exact matches, in which:
192 unique CDR3
8 unique J



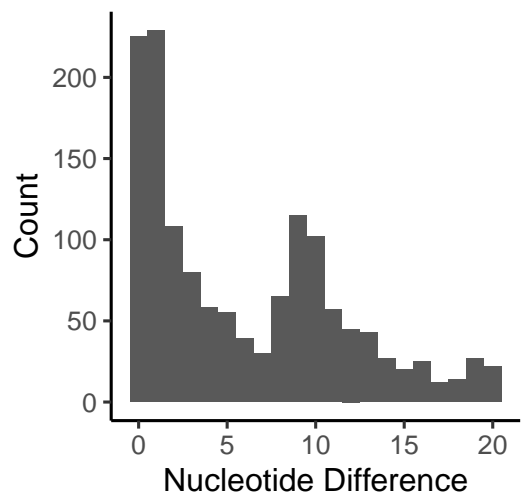
IGHV4-150*01_S1575

235 sequences assigned
51 (21.7%) exact matches, in which:
42 unique CDR3
7 unique J



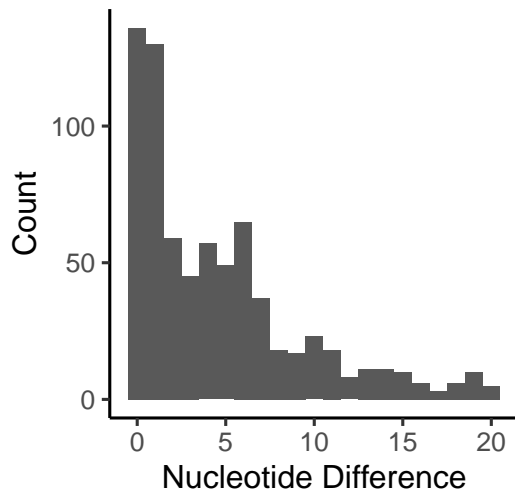
IGHV4-NL_1*01_S5208

1506 sequences assigned
225 (14.9%) exact matches, in which:
183 unique CDR3
7 unique J



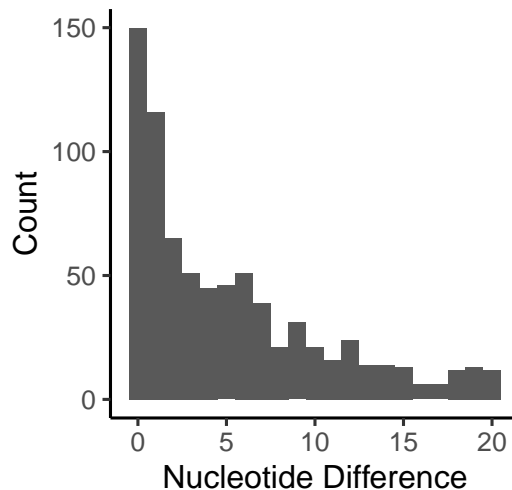
IGHV4–NL_1*01_S6348

733 sequences assigned
136 (18.6%) exact matches, in which:
106 unique CDR3
7 unique J



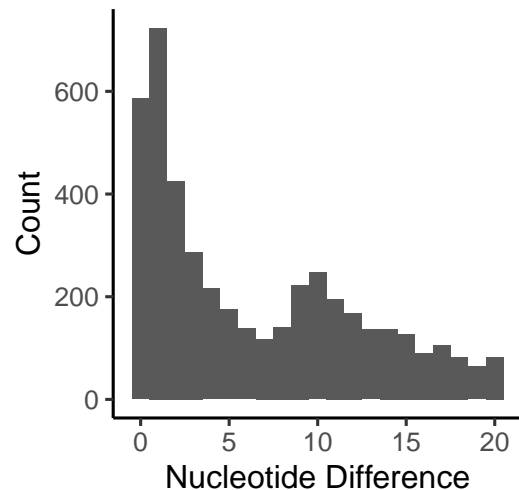
IGHV4–NL_10*01_S8809

868 sequences assigned
150 (17.3%) exact matches, in which:
135 unique CDR3
7 unique J



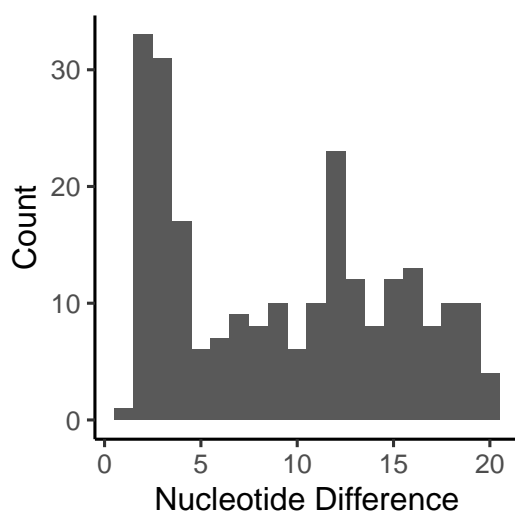
IGHV4–NL_16*01_S2138

5173 sequences assigned
586 (11.3%) exact matches, in which:
476 unique CDR3
8 unique J



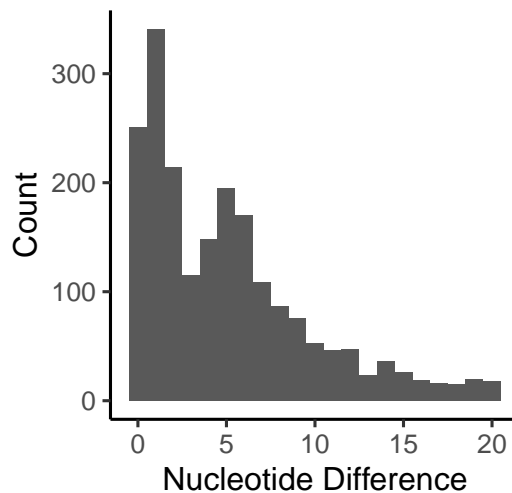
IGHV4–NL_1*01_S9616

442 sequences assigned
No exact matches.



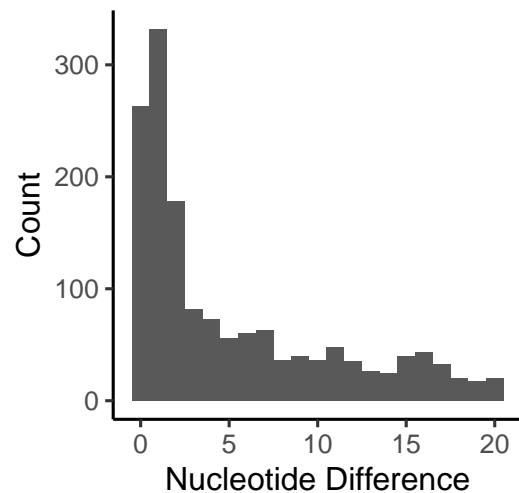
IGHV4–NL_12*01_S7070

2254 sequences assigned
251 (11.1%) exact matches, in which:
209 unique CDR3
8 unique J



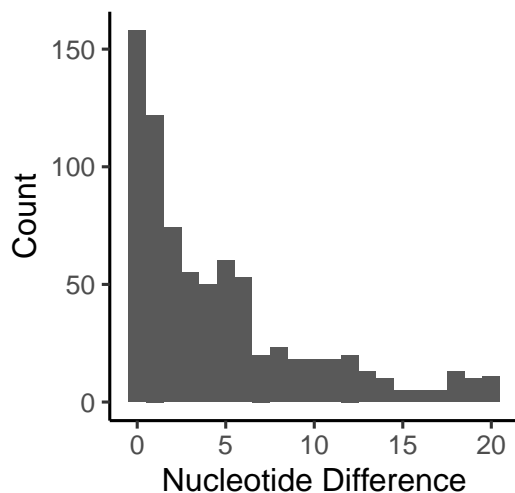
IGHV4–NL_16*01_S6904

1719 sequences assigned
263 (15.3%) exact matches, in which:
223 unique CDR3
7 unique J



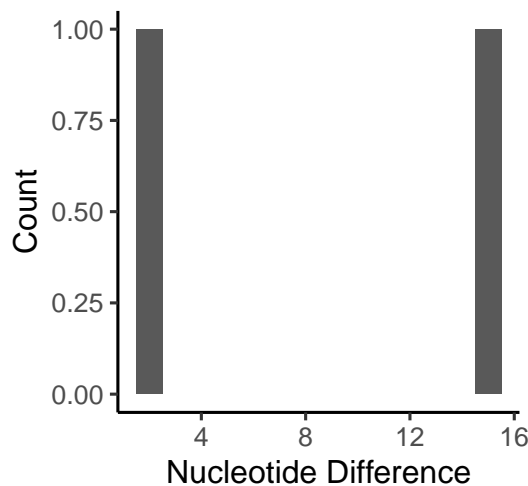
IGHV4–NL_10*01_S8809

831 sequences assigned
158 (19%) exact matches, in which:
125 unique CDR3
7 unique J



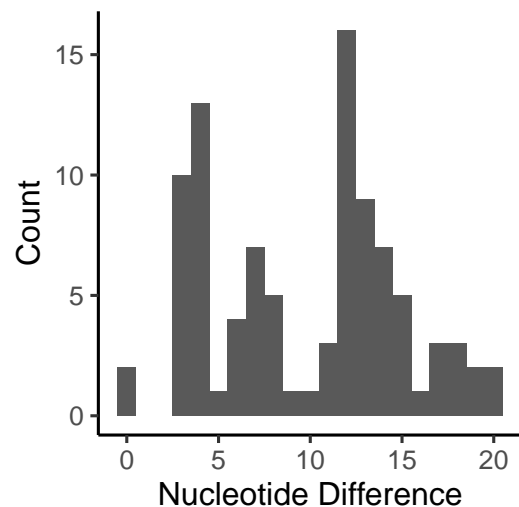
IGHV4–NL_13*01_S4123

2 sequences assigned
No exact matches.



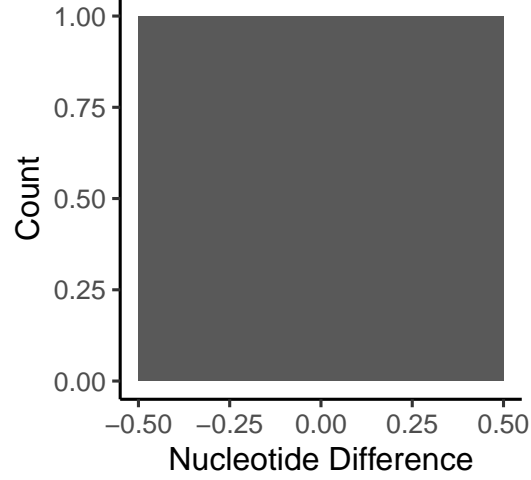
IGHV4–NL_17*01_S4099

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



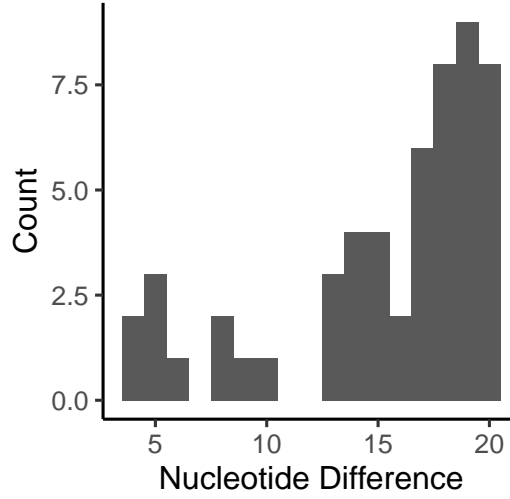
IGHV4-NL_18*01_S0143

658 sequences assigned
1 (0.2%) exact matches, in which:
1 unique CDR3
0 unique J



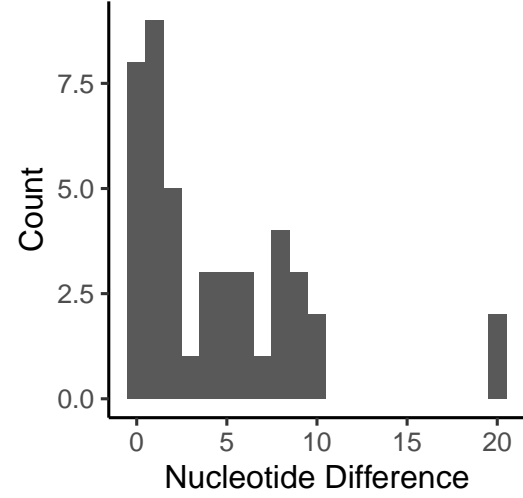
IGHV4-NL_22*01_S2464

169 sequences assigned
No exact matches.



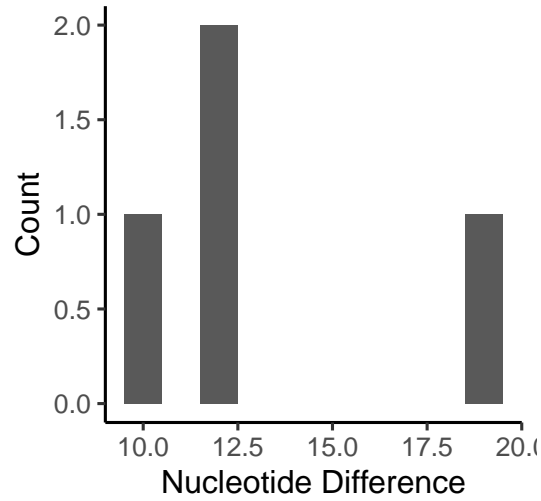
IGHV4-NL_23*01_S3043

47 sequences assigned
8 (17%) exact matches, in which:
8 unique CDR3
4 unique J



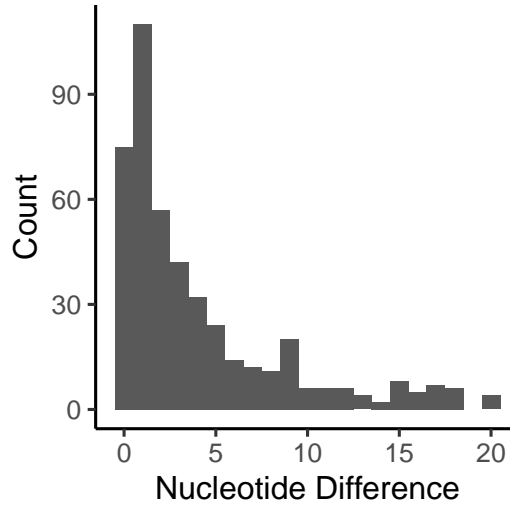
IGHV4-NL_18*01_S3907

6 sequences assigned
No exact matches.



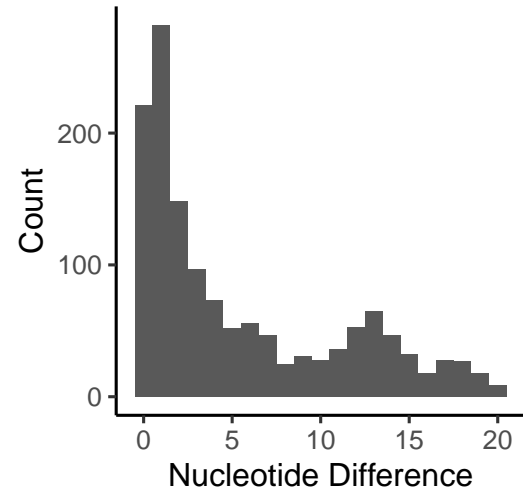
IGHV4-NL_22*01_S9255

481 sequences assigned
75 (15.6%) exact matches, in which:
70 unique CDR3
7 unique J



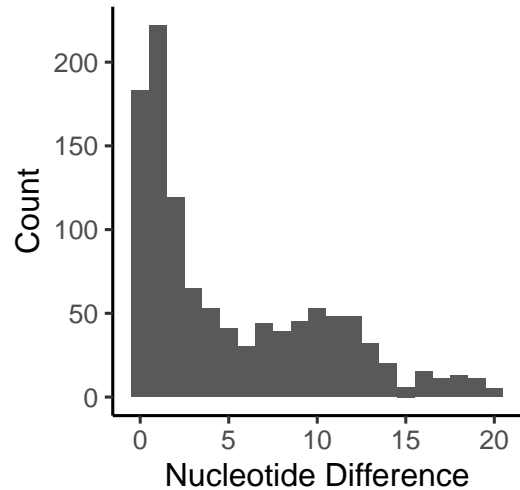
IGHV4-NL_25*01_S8450

1470 sequences assigned
221 (15%) exact matches, in which:
182 unique CDR3
6 unique J



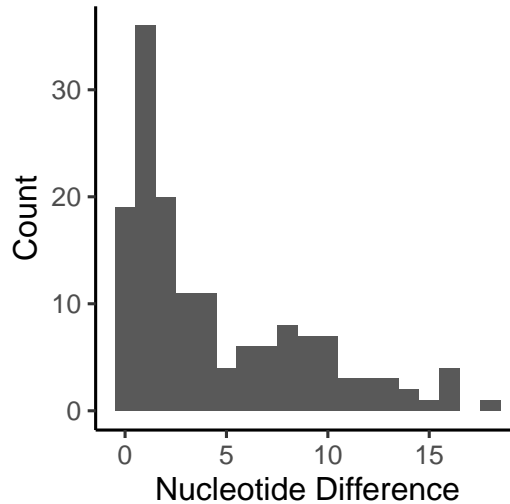
IGHV4-NL_21*01_S2225

1282 sequences assigned
183 (14.3%) exact matches, in which:
149 unique CDR3
8 unique J



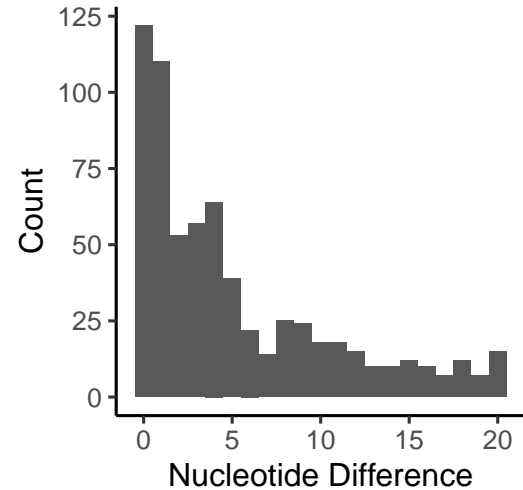
IGHV4-NL_22*01_S9735

156 sequences assigned
19 (12.2%) exact matches, in which:
16 unique CDR3
5 unique J



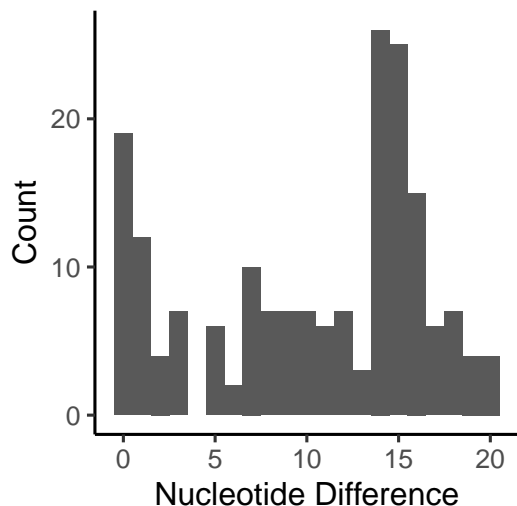
IGHV4-NL_27*01_S7296

761 sequences assigned
122 (16%) exact matches, in which:
106 unique CDR3
7 unique J



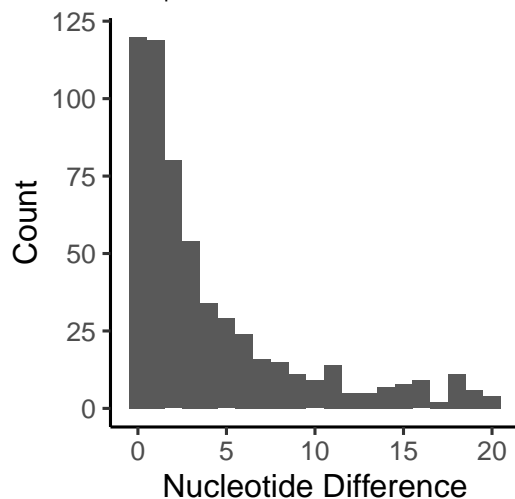
IGHV4–NL_28*01_S5354

213 sequences assigned
19 (8.9%) exact matches, in which:
18 unique CDR3
6 unique J



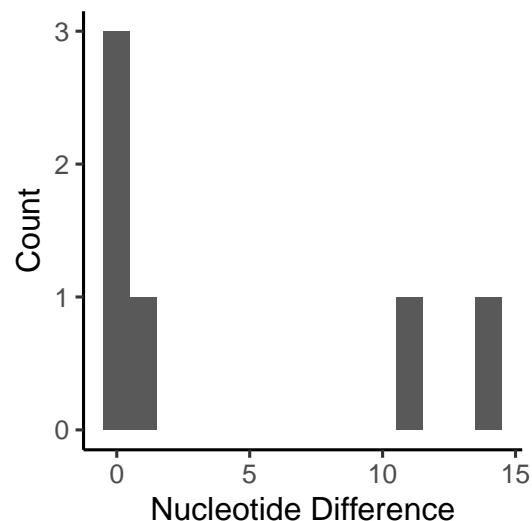
IGHV4–NL_29*01_S9610

590 sequences assigned
120 (20.3%) exact matches, in which:
97 unique CDR3
7 unique J



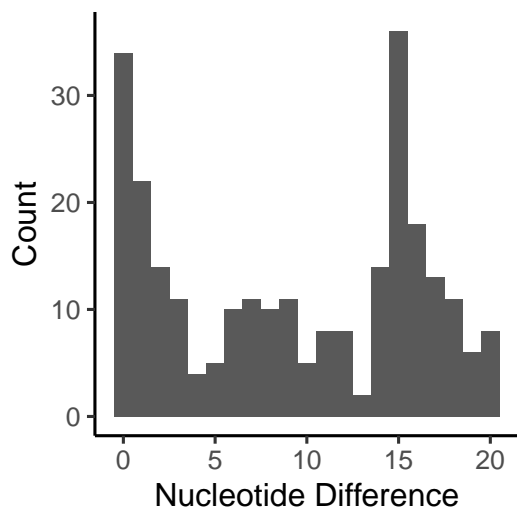
IGHV4–NL_31*01_S7693

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



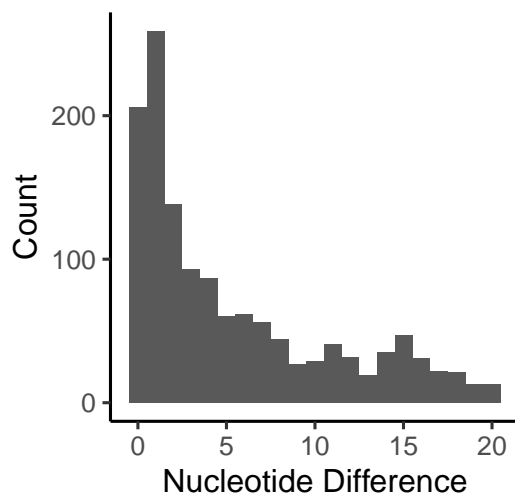
IGHV4–NL_28*01_S5354_

314 sequences assigned
34 (10.8%) exact matches, in which:
31 unique CDR3
7 unique J



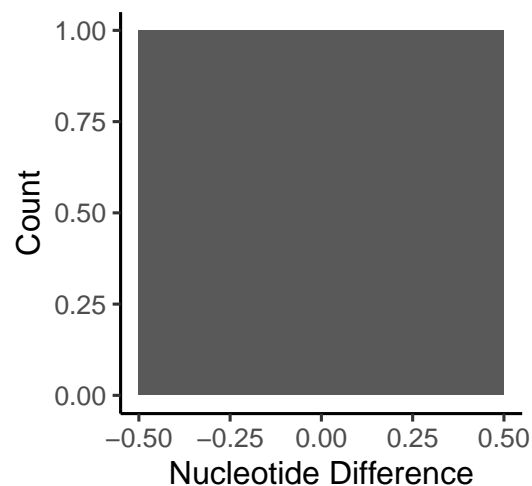
IGHV4–NL_3*01_S5200

1541 sequences assigned
206 (13.4%) exact matches, in which:
176 unique CDR3
8 unique J



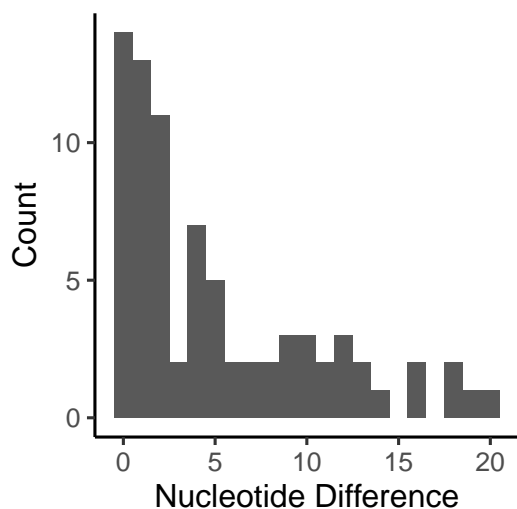
IGHV4–NL_31*01_S8320

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



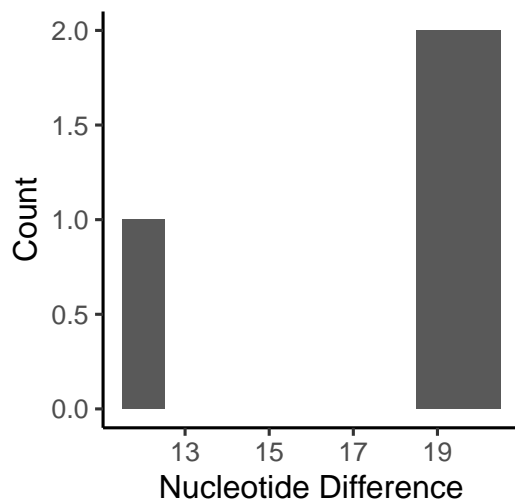
IGHV4–NL_29*01_S1425

89 sequences assigned
14 (15.7%) exact matches, in which:
11 unique CDR3
5 unique J



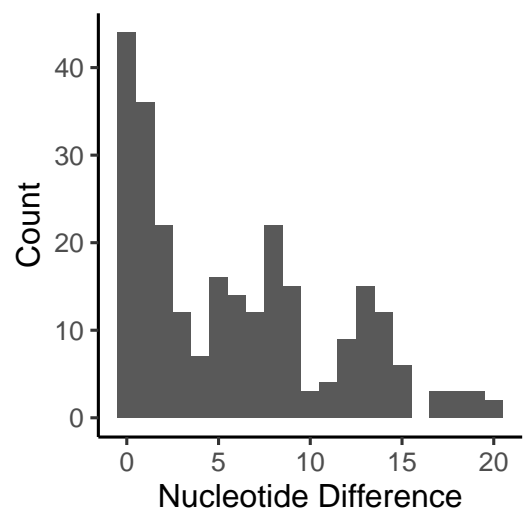
IGHV4–NL_30*01_S1240

18 sequences assigned
No exact matches.



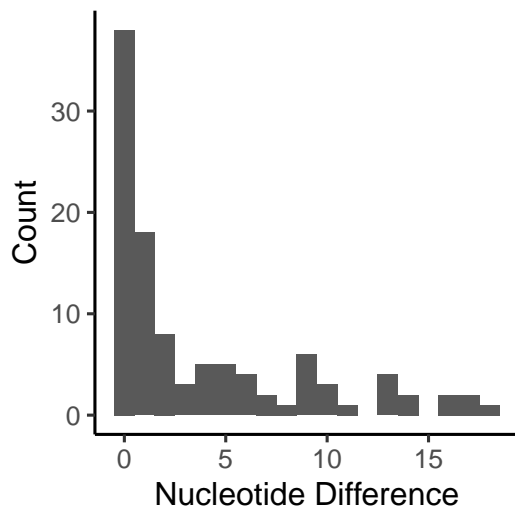
IGHV4–NL_32*01_S0782

271 sequences assigned
44 (16.2%) exact matches, in which:
33 unique CDR3
5 unique J



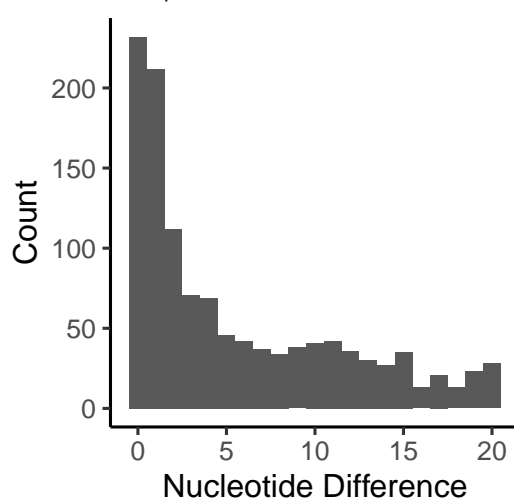
IGHV4–NL_32*01_S1450

107 sequences assigned
38 (35.5%) exact matches, in which:
36 unique CDR3
6 unique J



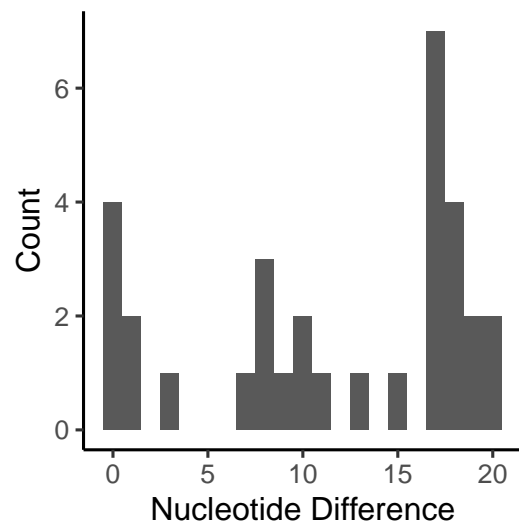
IGHV4–NL_37*01_S0825

1405 sequences assigned
232 (16.5%) exact matches, in which:
178 unique CDR3
6 unique J



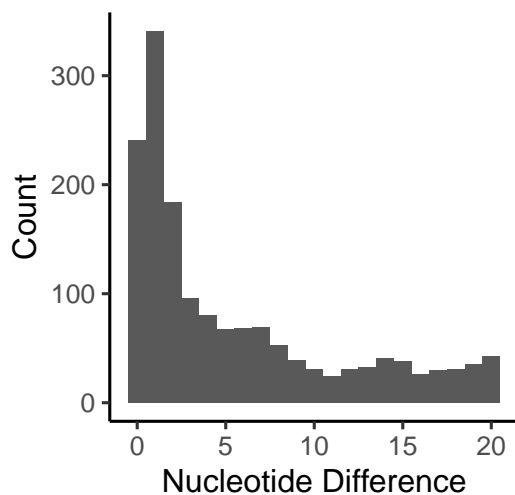
IGHV4–NL_38*01_S9225

74 sequences assigned
4 (5.4%) exact matches, in which:
4 unique CDR3
2 unique J



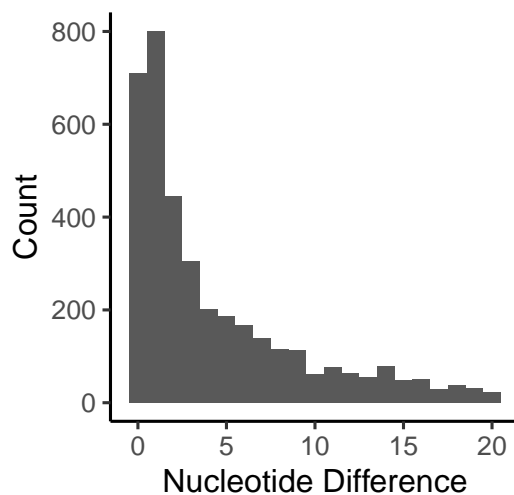
IGHV4–NL_33*01_S9588

1869 sequences assigned
241 (12.9%) exact matches, in which:
206 unique CDR3
7 unique J



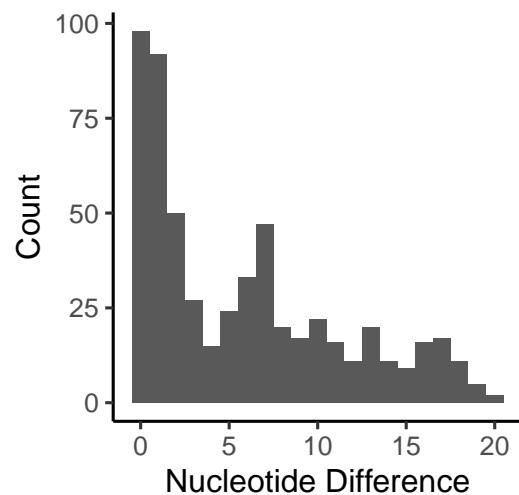
IGHV4–NL_37*01_S0997

3963 sequences assigned
711 (17.9%) exact matches, in which:
559 unique CDR3
7 unique J



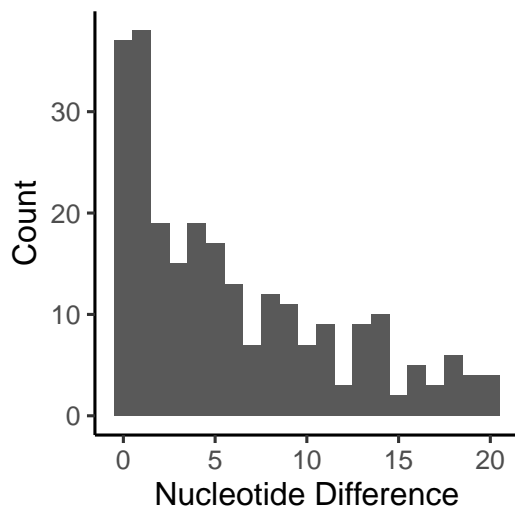
IGHV4–NL_4*01_S5211

597 sequences assigned
98 (16.4%) exact matches, in which:
74 unique CDR3
6 unique J



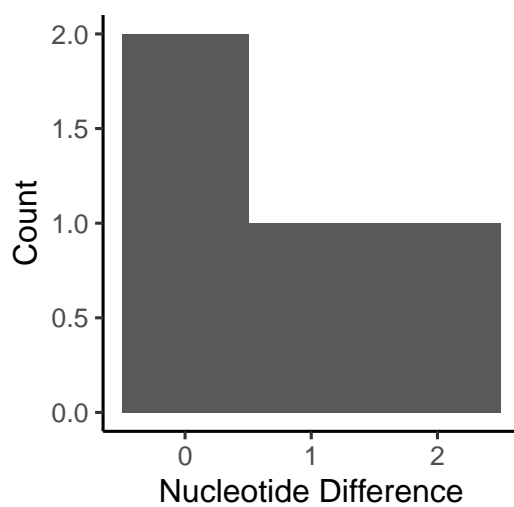
IGHV4–NL_36*01_S0869

281 sequences assigned
37 (13.2%) exact matches, in which:
32 unique CDR3
7 unique J



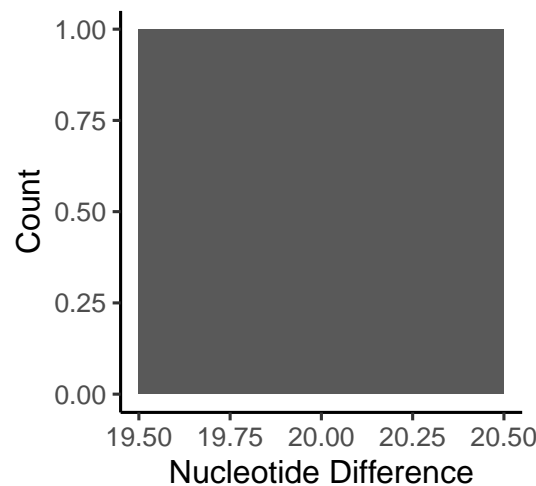
IGHV4–NL_38*01_S8437

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



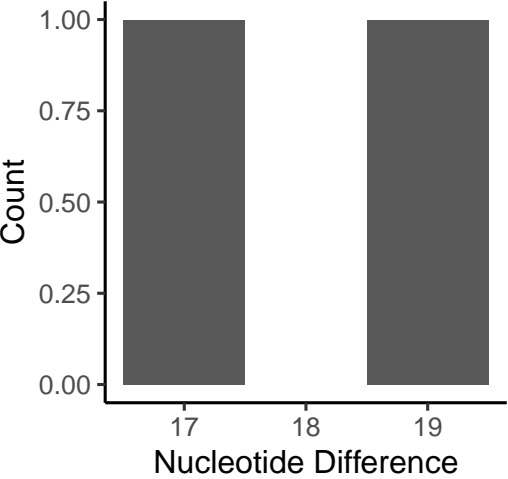
IGHV4–NL_40*01_S9020

1 sequences assigned
No exact matches.



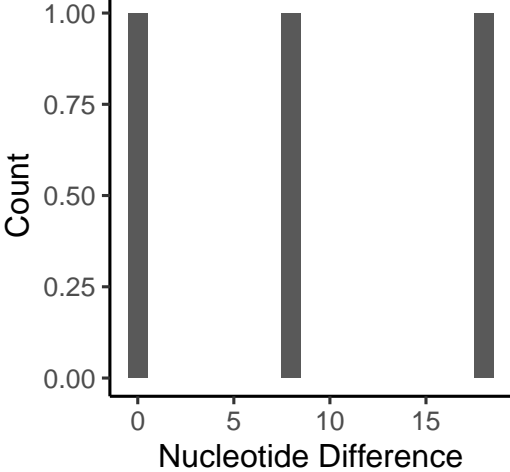
IGHV4-NL_41*01_S6928

49 sequences assigned
No exact matches.



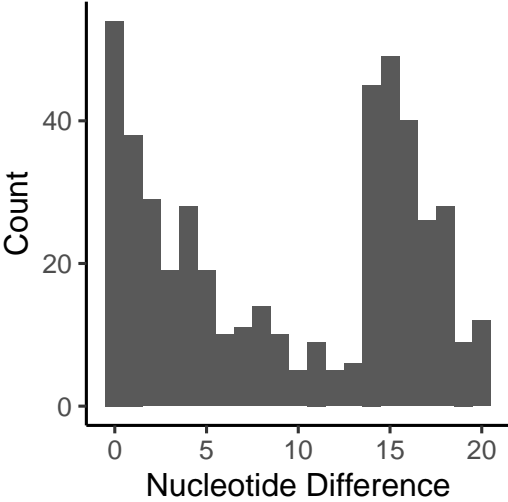
IGHV4-NL_43*01_S3820

3 sequences assigned
1 (33.3%) exact matches, in which:
1 unique CDR3
1 unique J



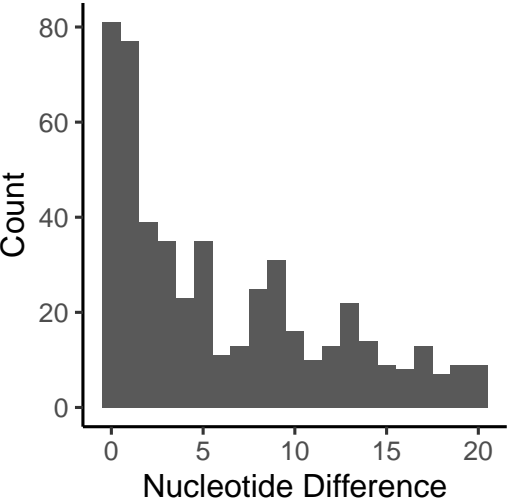
IGHV4-NL_6*01_S3486_A

711 sequences assigned
54 (7.6%) exact matches, in which:
45 unique CDR3
7 unique J



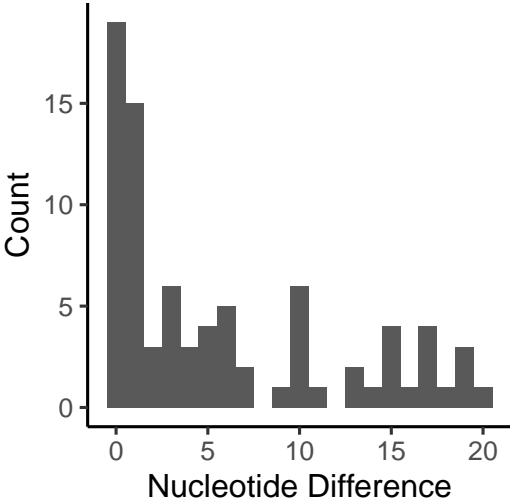
IGHV4-NL_42*01_S1512

536 sequences assigned
81 (15.1%) exact matches, in which:
63 unique CDR3
7 unique J



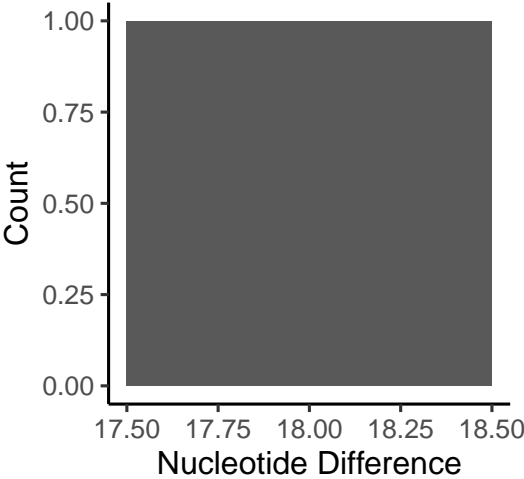
IGHV4-NL_5*01_S8913

96 sequences assigned
19 (19.8%) exact matches, in which:
16 unique CDR3
5 unique J



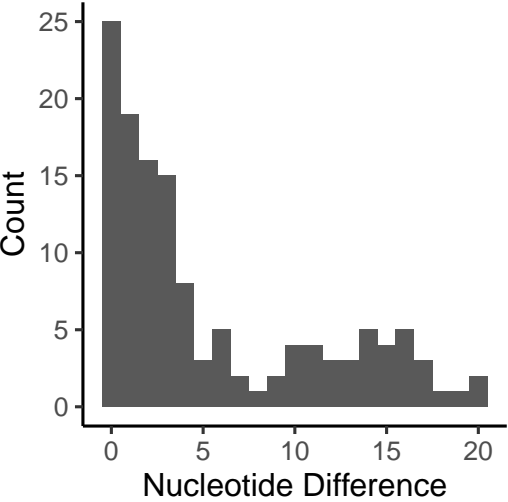
IGHV4-NL_7*02_S0143

1 sequences assigned
No exact matches.



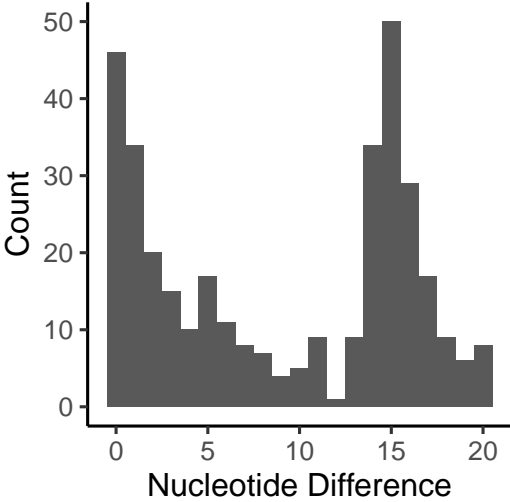
IGHV4-NL_42*01_S8528

135 sequences assigned
25 (18.5%) exact matches, in which:
17 unique CDR3
4 unique J



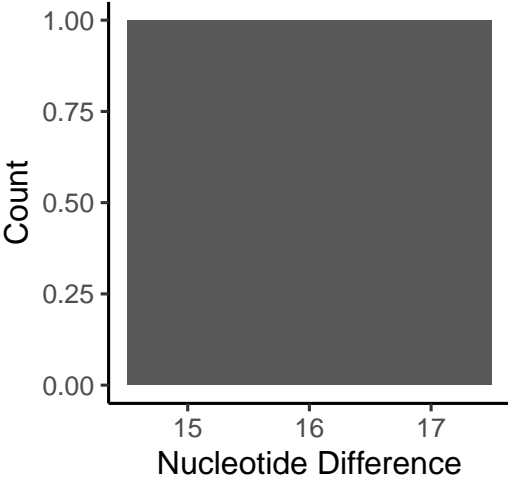
IGHV4-NL_6*01_S3486

442 sequences assigned
46 (10.4%) exact matches, in which:
40 unique CDR3
6 unique J



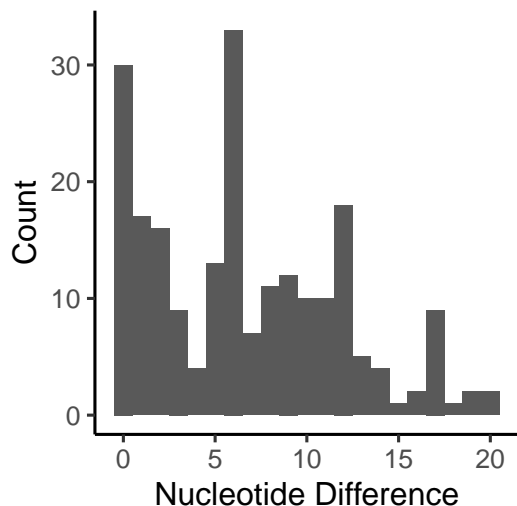
IGHV4-NL_7*02_S8742

3 sequences assigned
No exact matches.



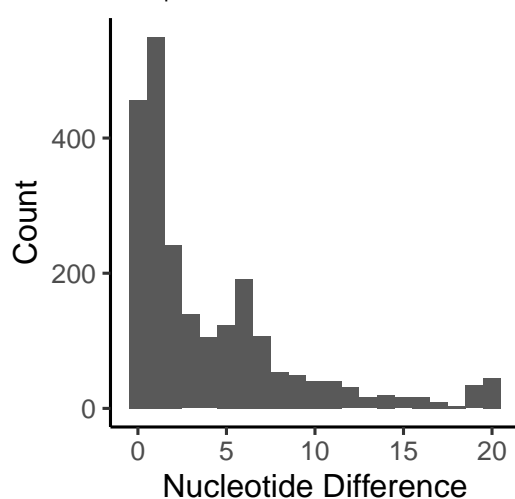
IGHV4–NL_8*02_S1704

254 sequences assigned
30 (11.8%) exact matches, in which:
24 unique CDR3
8 unique J



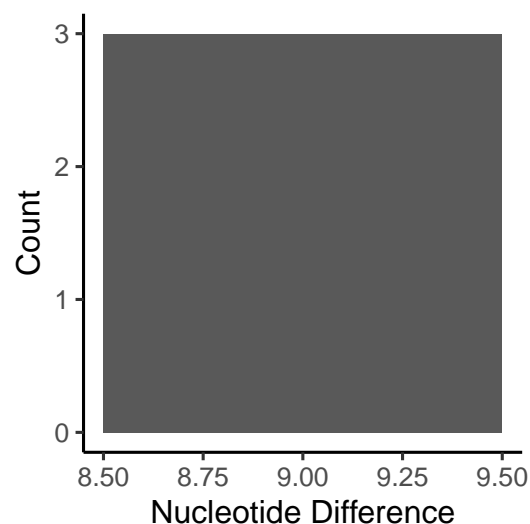
IGHV5–15*01_S0250

2361 sequences assigned
456 (19.3%) exact matches, in which:
292 unique CDR3
9 unique J



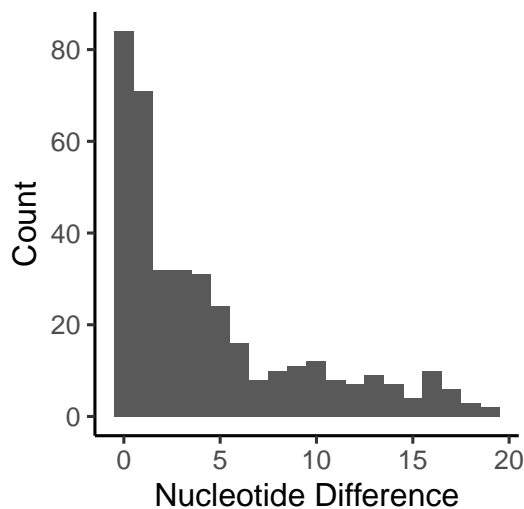
IGHV7–86*01_S8063

3 sequences assigned
No exact matches.



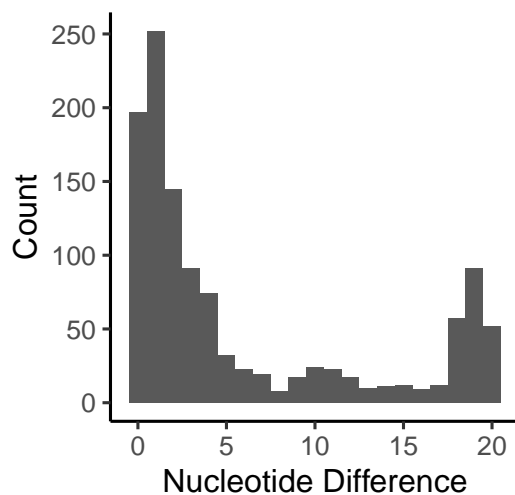
IGHV4–NL_9*01_S7216

501 sequences assigned
84 (16.8%) exact matches, in which:
72 unique CDR3
8 unique J



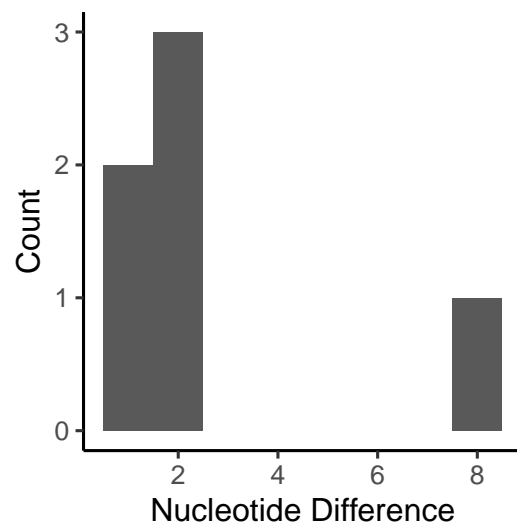
IGHV5–157*01_S5960

1280 sequences assigned
197 (15.4%) exact matches, in which:
109 unique CDR3
8 unique J



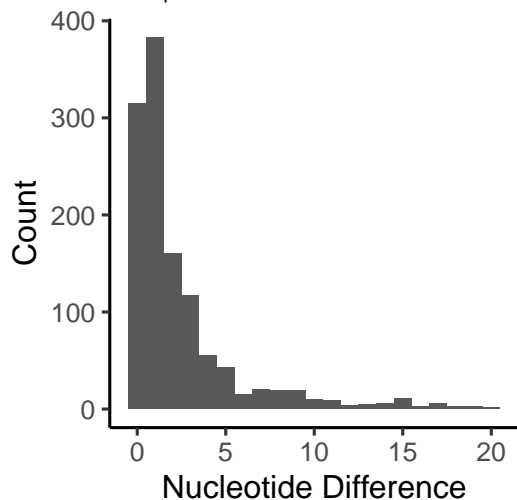
IGHV7–135*01_S9086

6 sequences assigned
No exact matches.



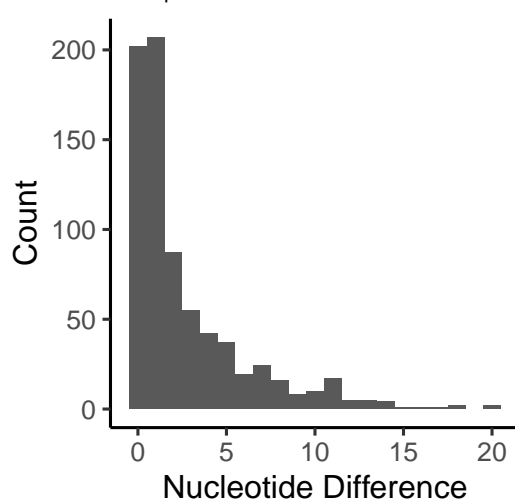
IGHV5–15*01_S0203

1222 sequences assigned
315 (25.8%) exact matches, in which:
188 unique CDR3
8 unique J

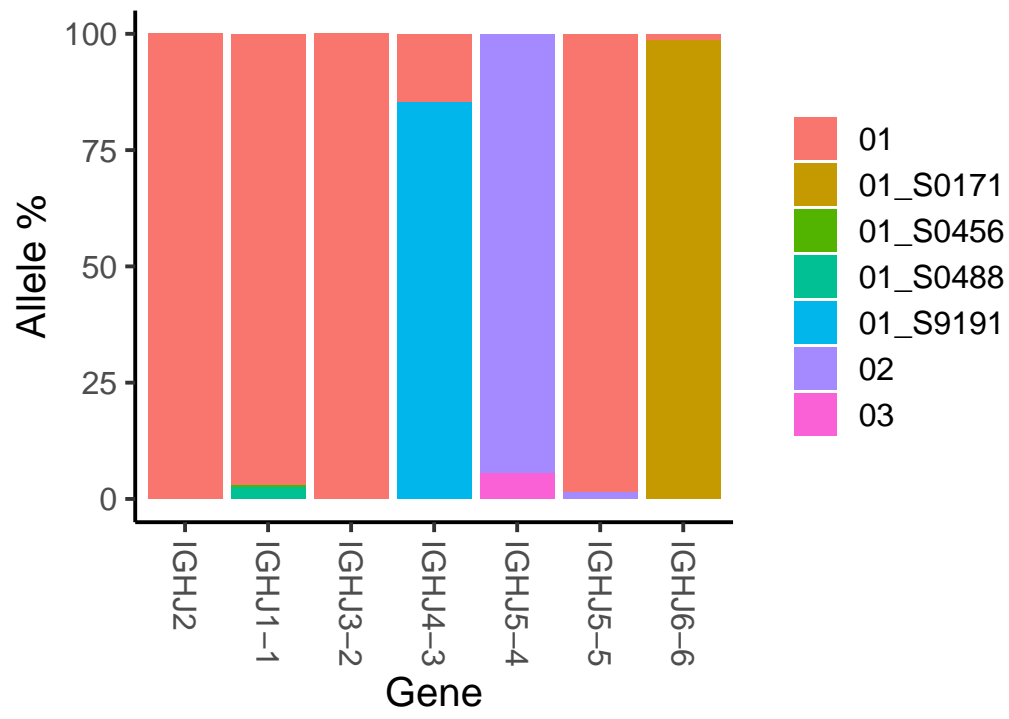


IGHV5–157*01_S8626

783 sequences assigned
202 (25.8%) exact matches, in which:
124 unique CDR3
8 unique J



Allele Usage



Warning – no inferred sequences found.