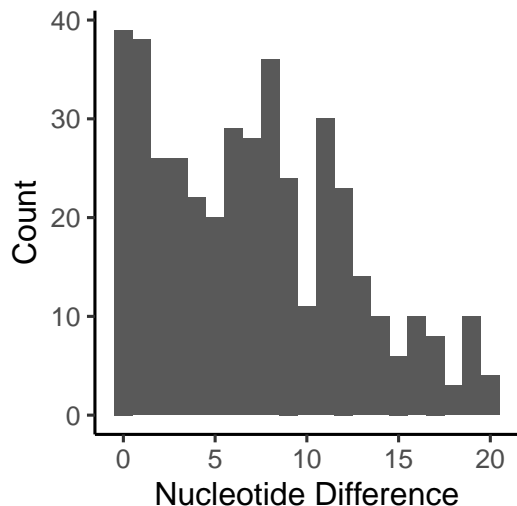


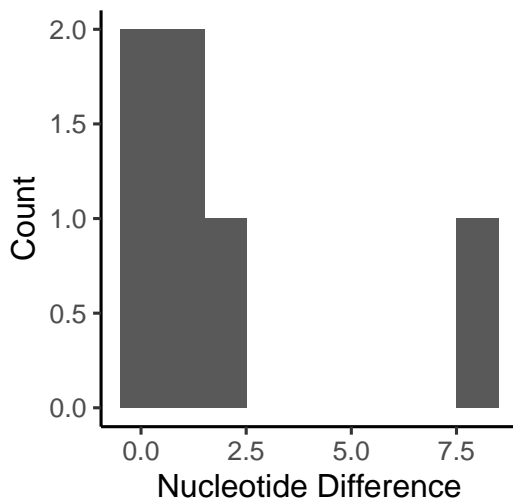
IGHV1-60*01_S7772

432 sequences assigned
39 (9%) exact matches, in which:
34 unique CDR3
4 unique J



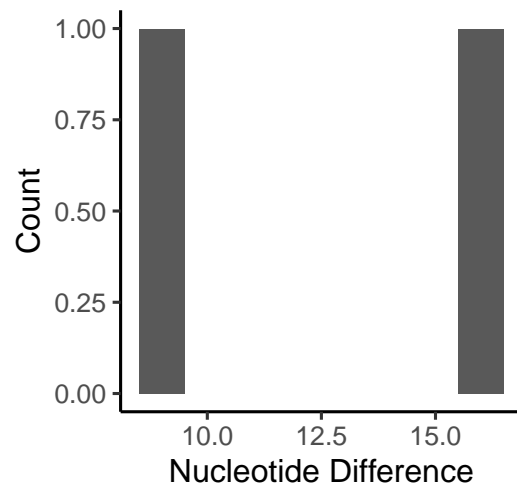
IGHV1-138*01_S2593

6 sequences assigned
2 (33.3%) exact matches, in which:
2 unique CDR3
2 unique J



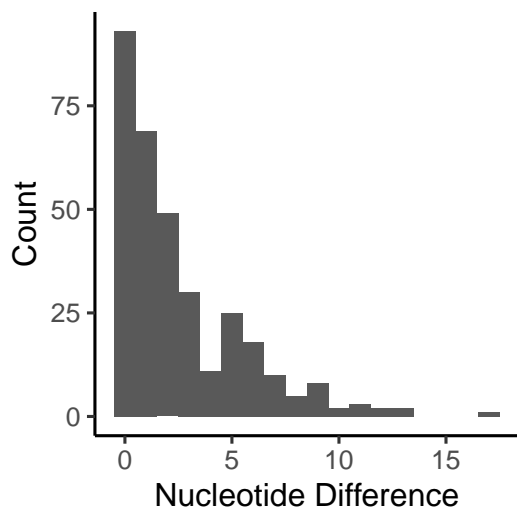
IGHV1-NL_2*01_S5797

2 sequences assigned
No exact matches.



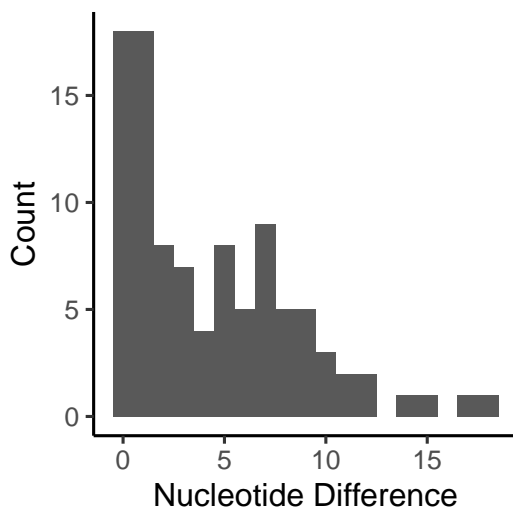
IGHV1-84*01_S5228

389 sequences assigned
93 (23.9%) exact matches, in which:
54 unique CDR3
4 unique J



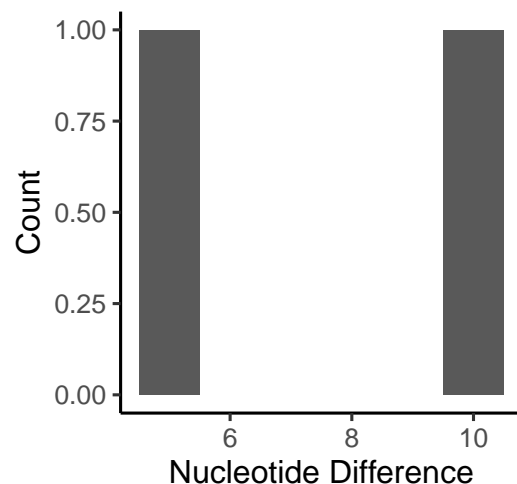
IGHV1-138*01_S8841

99 sequences assigned
18 (18.2%) exact matches, in which:
12 unique CDR3
3 unique J



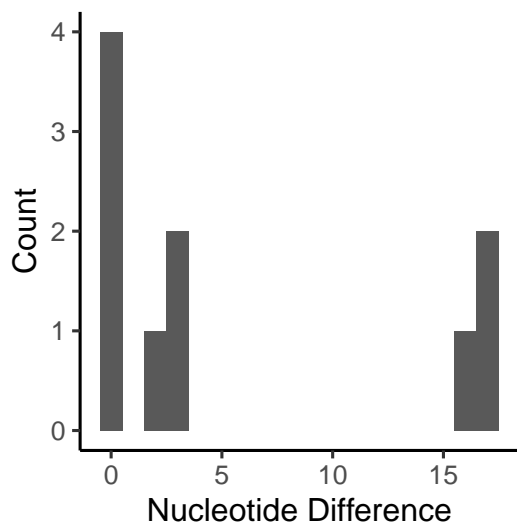
IGHV2-7*02_S1732

2 sequences assigned
No exact matches.



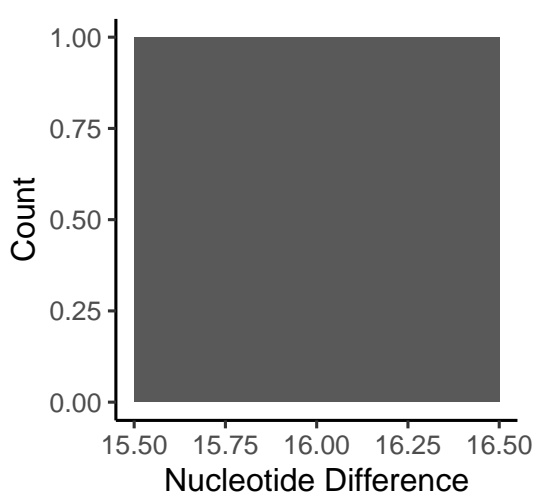
IGHV1-124*01_S6748

11 sequences assigned
4 (36.4%) exact matches, in which:
3 unique CDR3
1 unique J



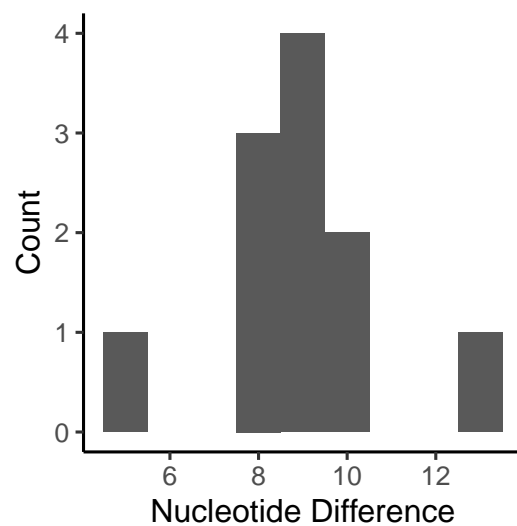
IGHV1-NL_1*01_S2052

1 sequences assigned
No exact matches.



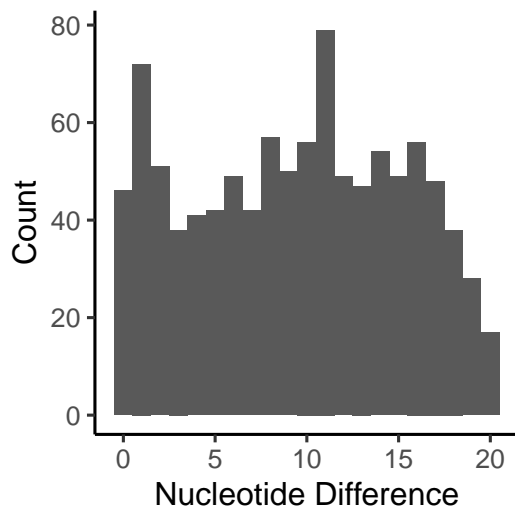
IGHV2-7*02_S4285

11 sequences assigned
No exact matches.



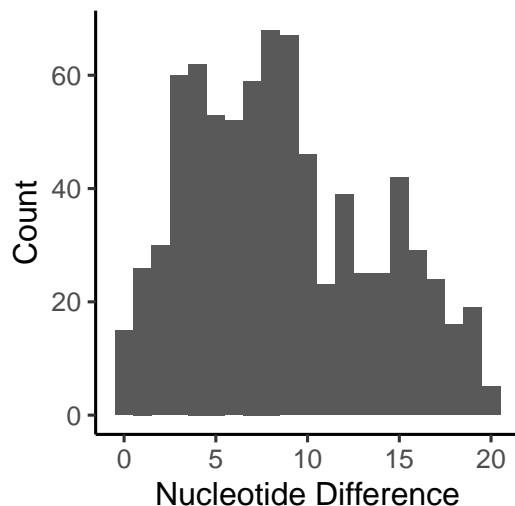
IGHV2-69*01_S2408

1293 sequences assigned
46 (3.6%) exact matches, in which:
31 unique CDR3
3 unique J



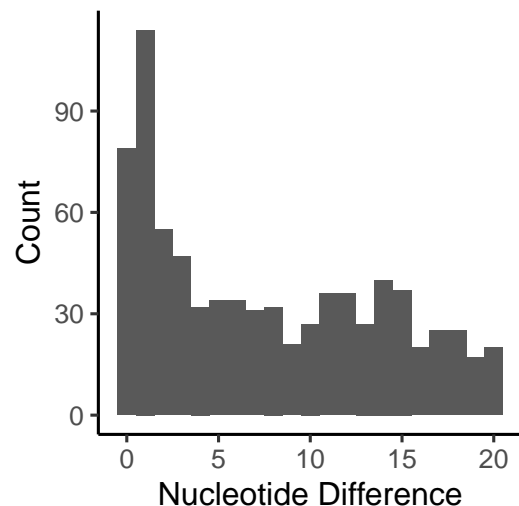
IGHV2-118*01_S8953

861 sequences assigned
15 (1.7%) exact matches, in which:
10 unique CDR3
2 unique J



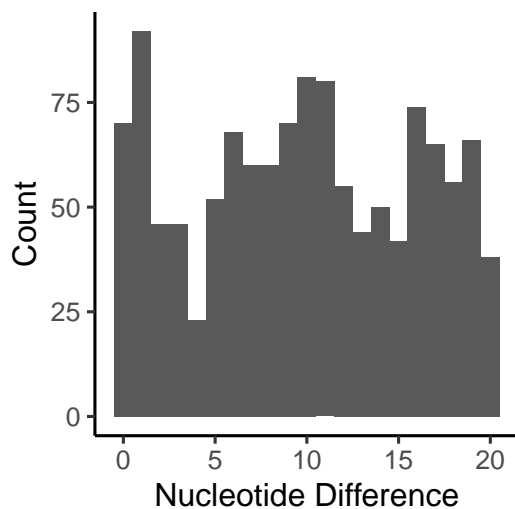
IGHV2-NL_1*01_S9725

937 sequences assigned
79 (8.4%) exact matches, in which:
51 unique CDR3
5 unique J



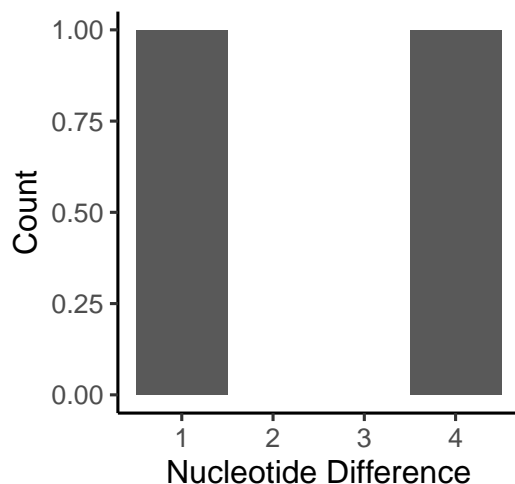
IGHV2-69*01_S6153

1431 sequences assigned
70 (4.9%) exact matches, in which:
39 unique CDR3
4 unique J



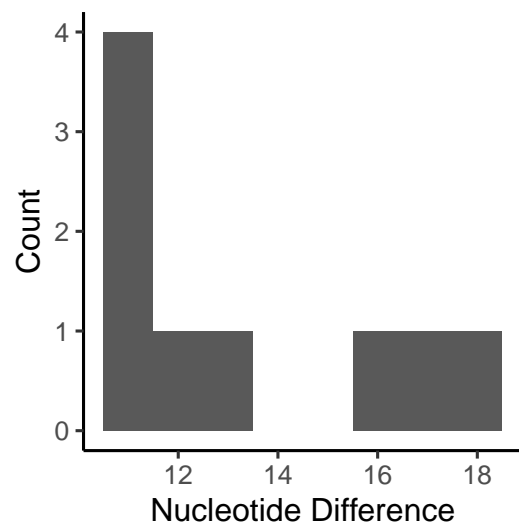
IGHV2-173*01_S2781

3 sequences assigned
No exact matches.



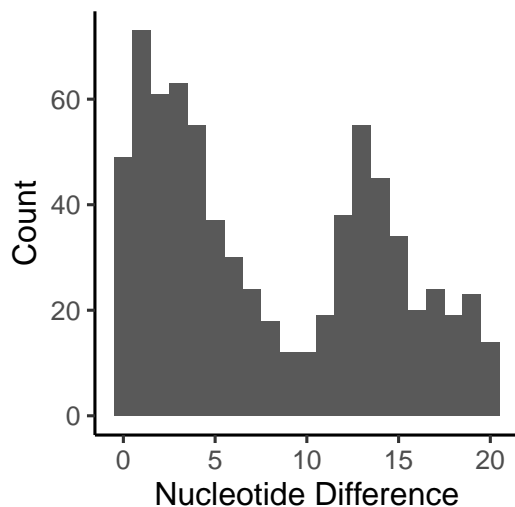
IGHV2-NL_2*01_S2193

9 sequences assigned
No exact matches.



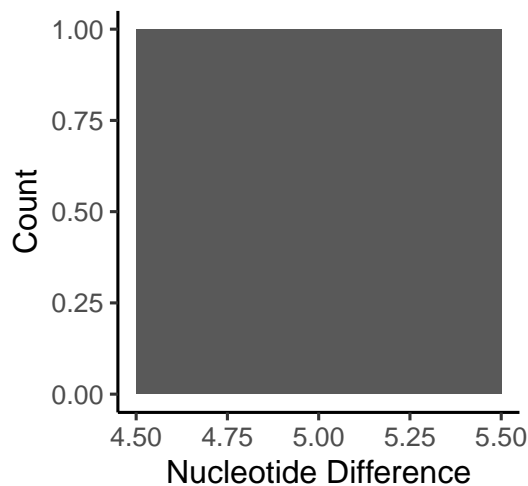
IGHV2-118*01_S2768

877 sequences assigned
49 (5.6%) exact matches, in which:
33 unique CDR3
3 unique J



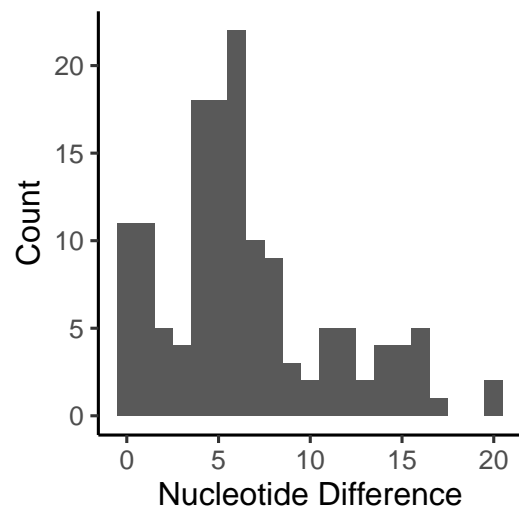
IGHV2-173*01_S9930

1 sequences assigned
No exact matches.



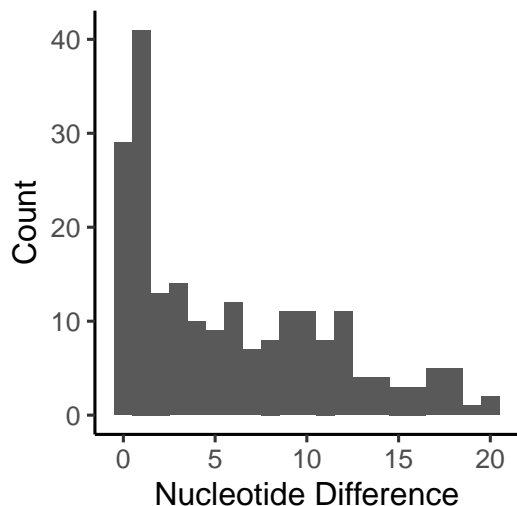
IGHV3-9*01_S0778

146 sequences assigned
11 (7.5%) exact matches, in which:
8 unique CDR3
3 unique J



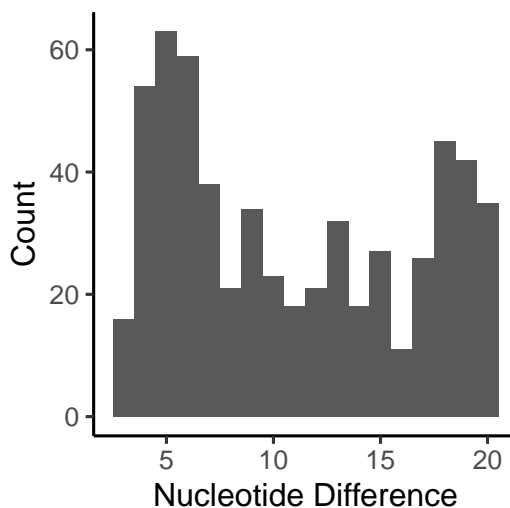
IGHV3-9*01_S4754

223 sequences assigned
29 (13%) exact matches, in which:
15 unique CDR3
4 unique J



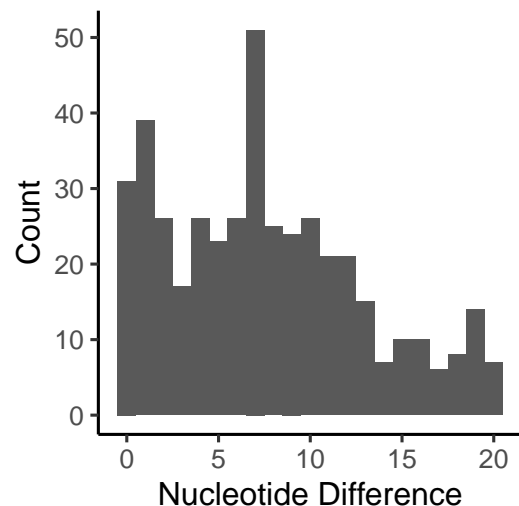
IGHV3-37*01_S6630

715 sequences assigned
No exact matches.



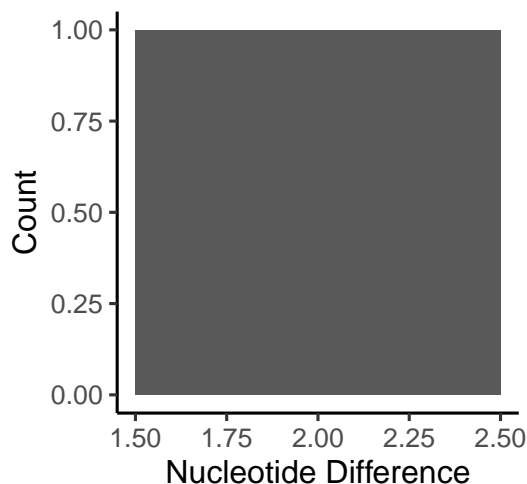
IGHV3-53*01_S2949

447 sequences assigned
31 (6.9%) exact matches, in which:
22 unique CDR3
3 unique J



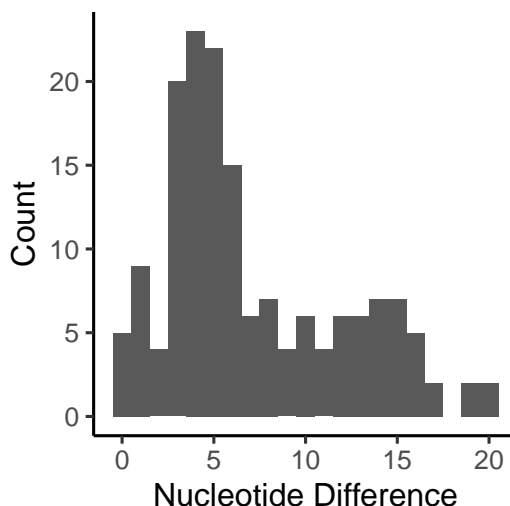
IGHV3-28*01_S3792

2 sequences assigned
No exact matches.



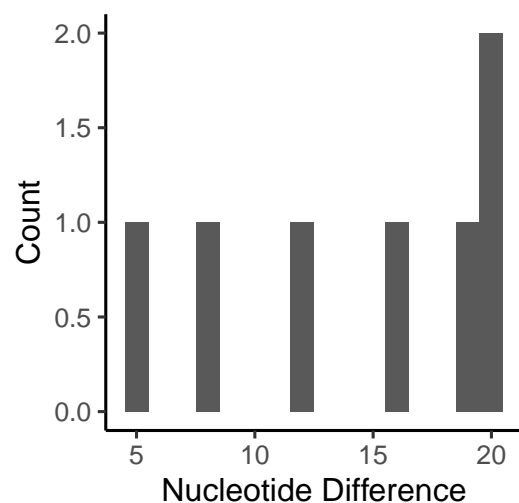
IGHV3-52*01_S3960

172 sequences assigned
5 (2.9%) exact matches, in which:
3 unique CDR3
2 unique J



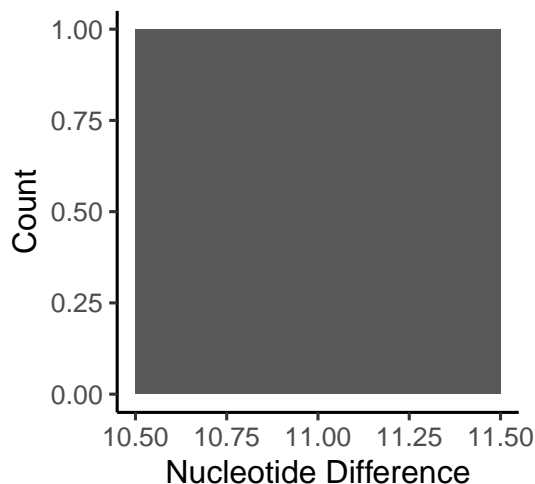
IGHV3-53*01_S4071

135 sequences assigned
No exact matches.



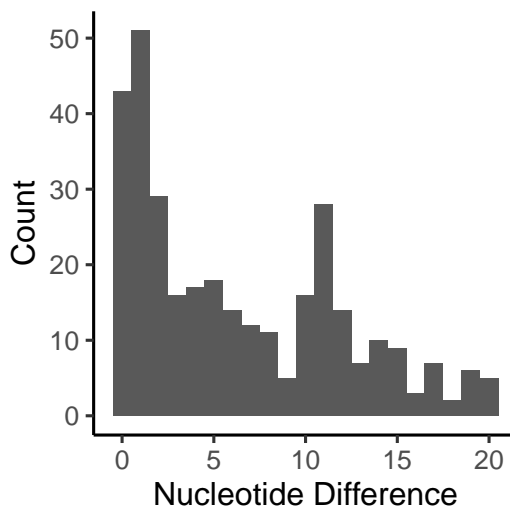
IGHV3-28*01_S5703

2 sequences assigned
No exact matches.



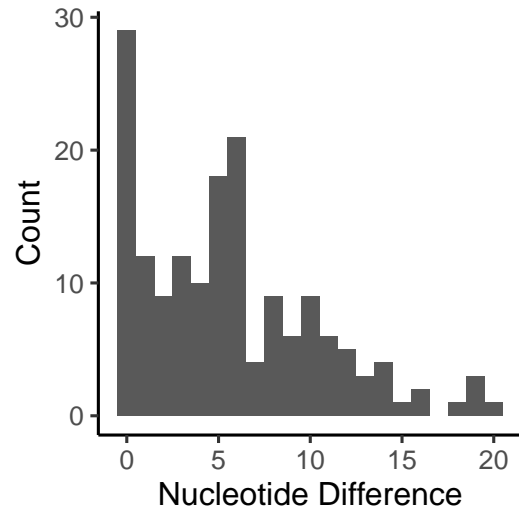
IGHV3-52*01_S8160

332 sequences assigned
43 (13%) exact matches, in which:
25 unique CDR3
2 unique J



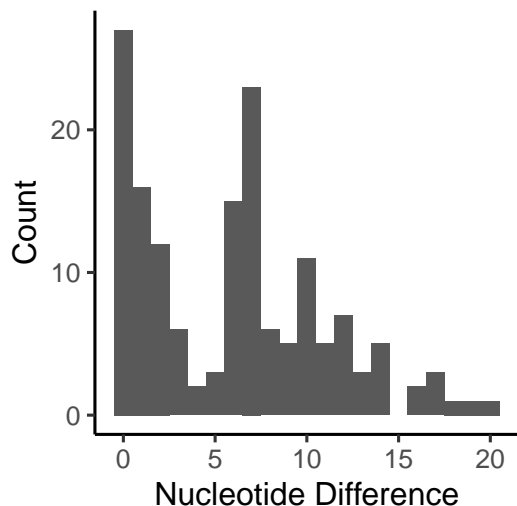
IGHV3-73*01_S6942

172 sequences assigned
29 (16.9%) exact matches, in which:
22 unique CDR3
3 unique J



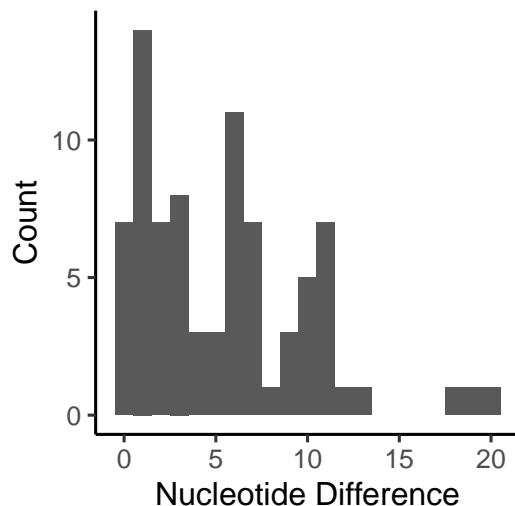
IGHV3-73*02_S3937

172 sequences assigned
27 (15.7%) exact matches, in which:
17 unique CDR3
3 unique J



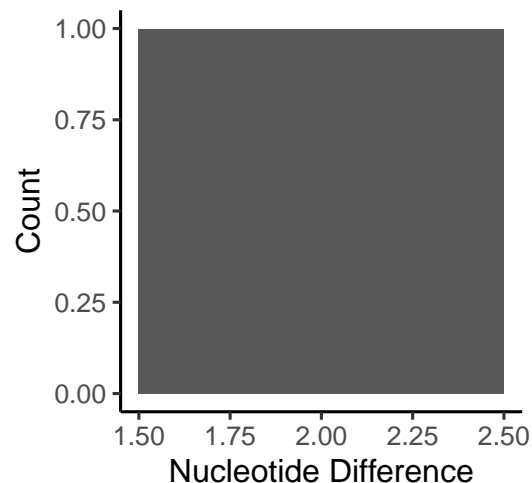
IGHV3-83*01_S9109

83 sequences assigned
7 (8.4%) exact matches, in which:
7 unique CDR3
2 unique J



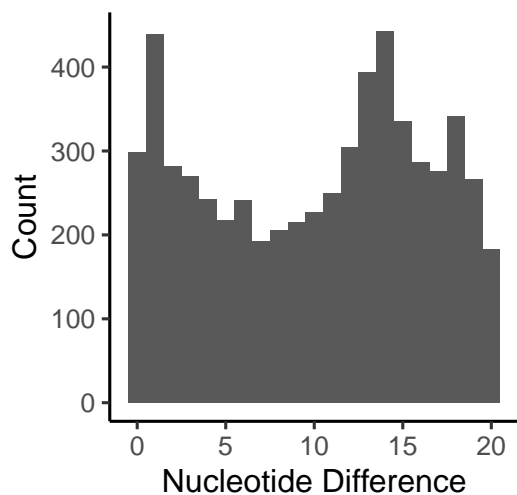
IGHV3-94*01_S3427

1 sequences assigned
No exact matches.



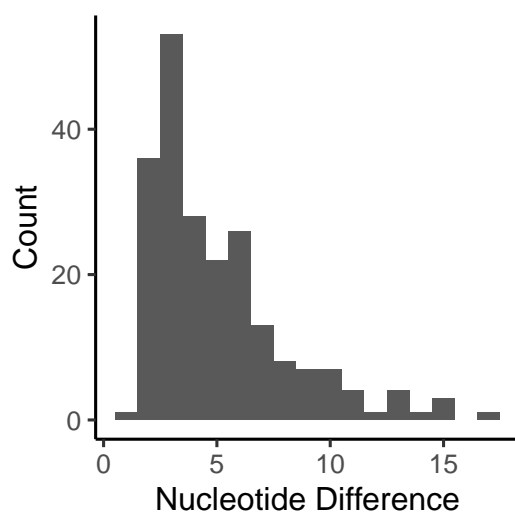
IGHV3-76*01_S4285

6582 sequences assigned
298 (4.5%) exact matches, in which:
193 unique CDR3
5 unique J



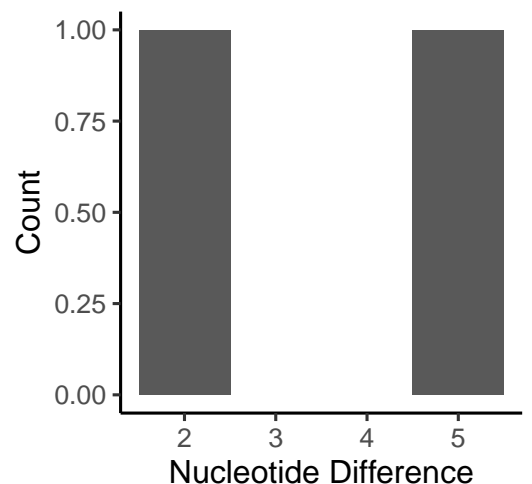
IGHV3-87*01_S6311

238 sequences assigned
No exact matches.



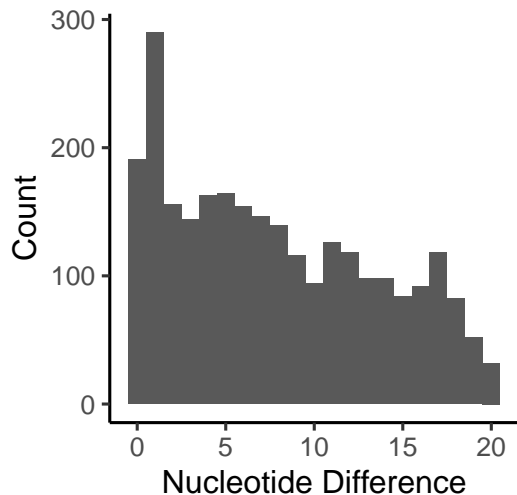
IGHV3-94*01_S4458

3 sequences assigned
No exact matches.



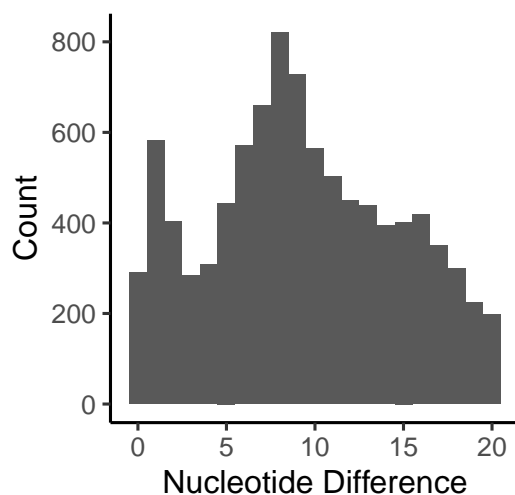
IGHV3-76*01_S5420

2879 sequences assigned
191 (6.6%) exact matches, in which:
124 unique CDR3
5 unique J



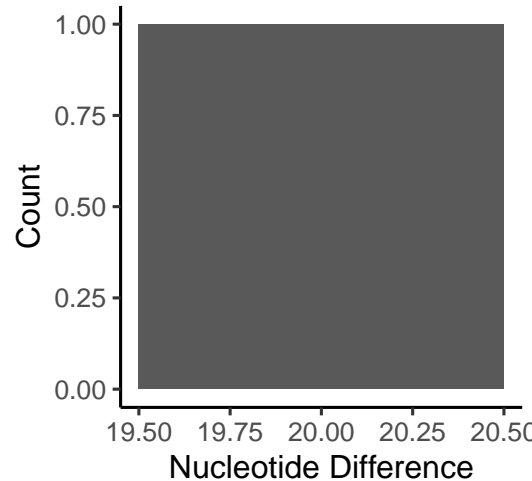
IGHV3-88*01_S4297

10413 sequences assigned
290 (2.8%) exact matches, in which:
173 unique CDR3
5 unique J



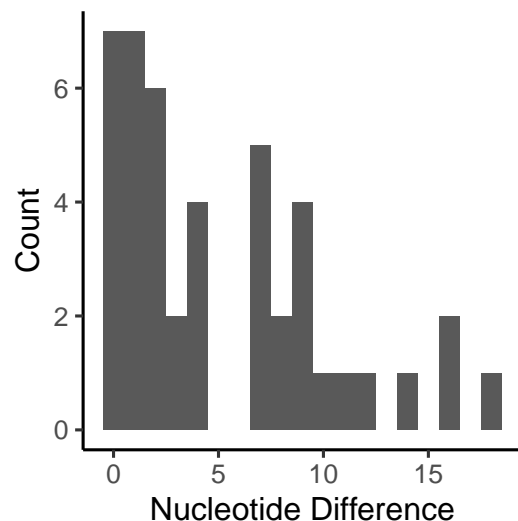
IGHV3-94*01_S7982

11 sequences assigned
No exact matches.



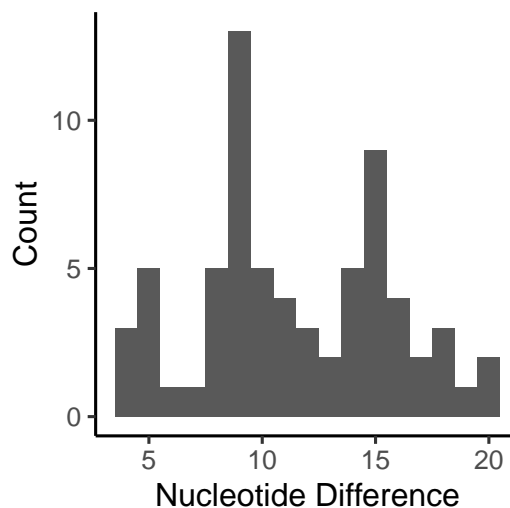
IGHV3-100*01_S4375

87 sequences assigned
7 (8%) exact matches, in which:
6 unique CDR3
1 unique J



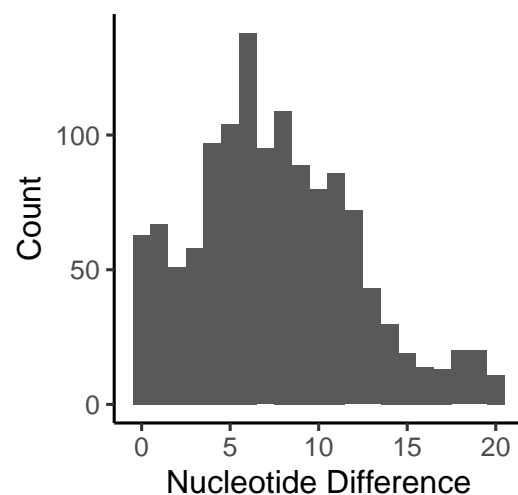
IGHV3-122*01_S2730

169 sequences assigned
No exact matches.



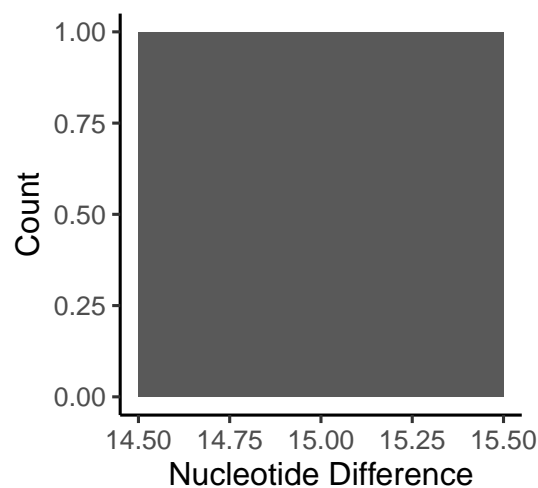
IGHV3-127*01_S3041

1404 sequences assigned
63 (4.5%) exact matches, in which:
40 unique CDR3
2 unique J



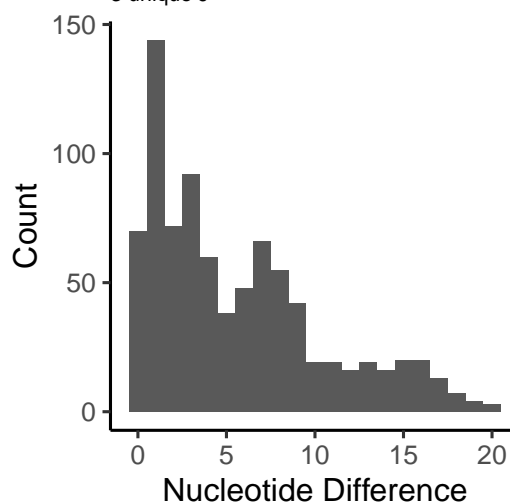
IGHV3-103*01_S2756

34 sequences assigned
No exact matches.



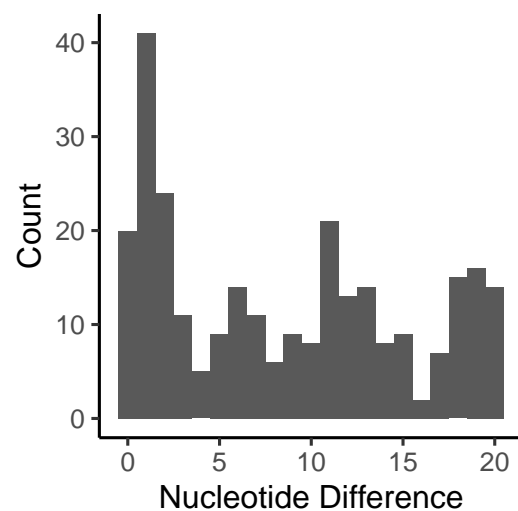
IGHV3-122*01_S6138

855 sequences assigned
70 (8.2%) exact matches, in which:
37 unique CDR3
3 unique J



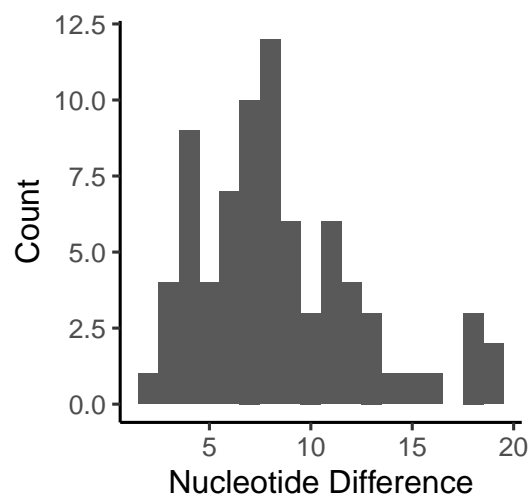
IGHV3-127*01_S8923

343 sequences assigned
20 (5.8%) exact matches, in which:
16 unique CDR3
2 unique J



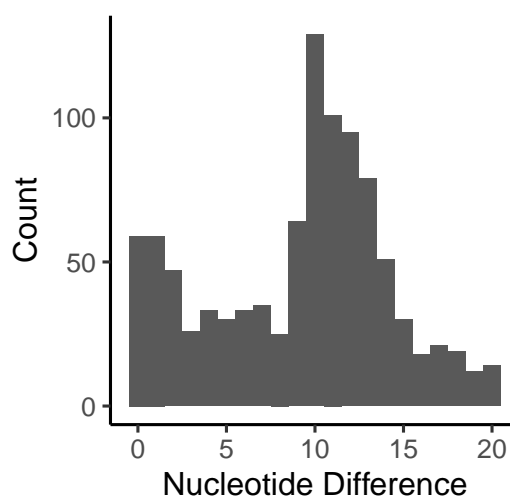
IGHV3-120*01_S4231

78 sequences assigned
No exact matches.



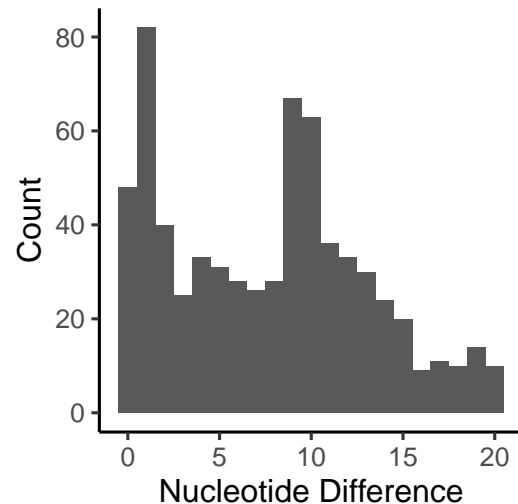
IGHV3-122*01_S8388

1119 sequences assigned
59 (5.3%) exact matches, in which:
34 unique CDR3
4 unique J



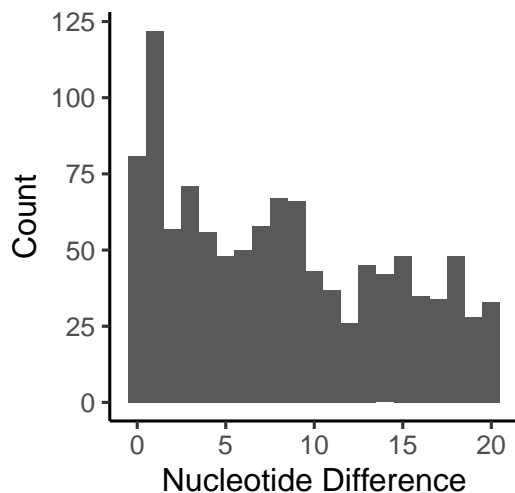
IGHV3-128*01_S3120

697 sequences assigned
48 (6.9%) exact matches, in which:
32 unique CDR3
2 unique J



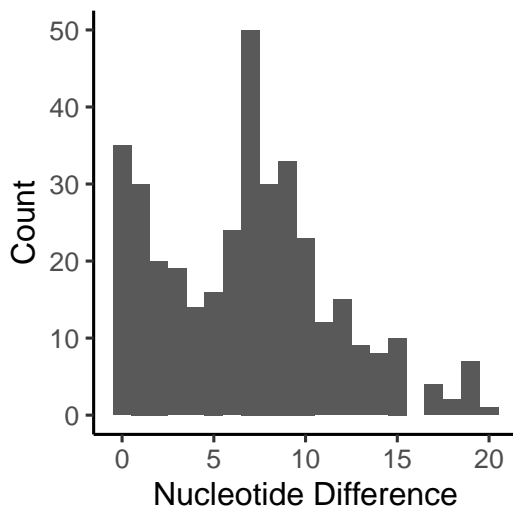
IGHV3-128*02_S0204

2899 sequences assigned
81 (2.8%) exact matches, in which:
41 unique CDR3
4 unique J



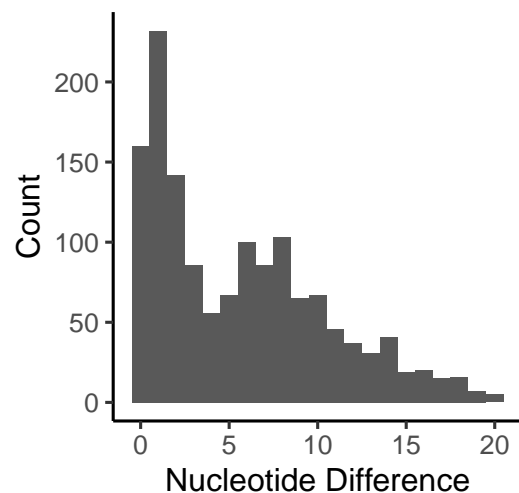
IGHV3-177*01_S4102

391 sequences assigned
35 (9%) exact matches, in which:
23 unique CDR3
3 unique J



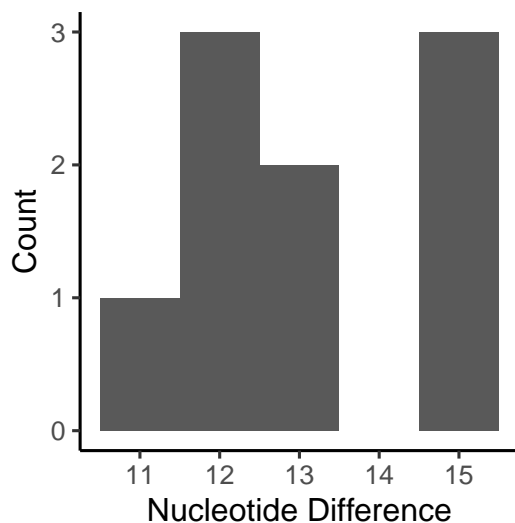
IGHV3-187*01_S4259

1695 sequences assigned
160 (9.4%) exact matches, in which:
103 unique CDR3
5 unique J



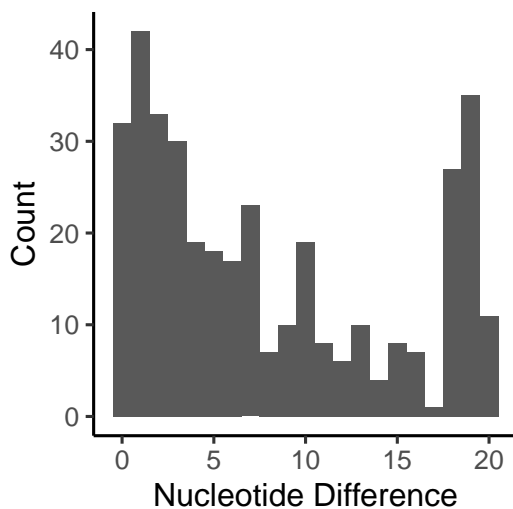
IGHV3-141*02_S6589

12 sequences assigned
No exact matches.



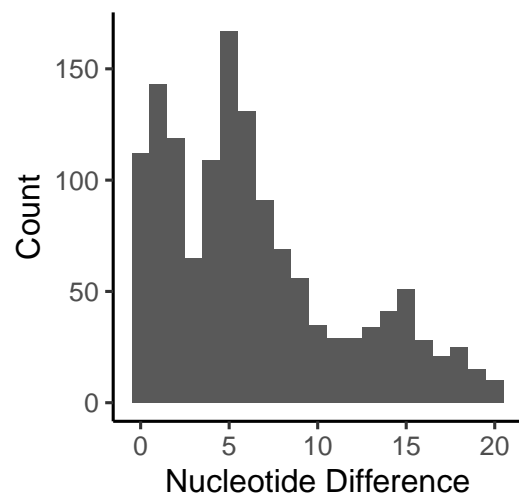
IGHV3-177*01_S8387

418 sequences assigned
32 (7.7%) exact matches, in which:
20 unique CDR3
3 unique J



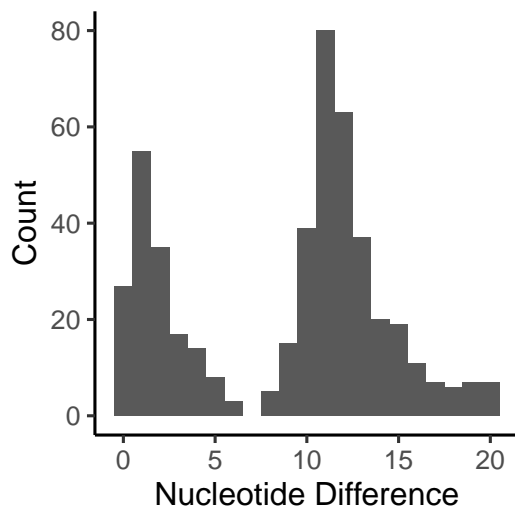
IGHV3-187*02_S8458

1522 sequences assigned
112 (7.4%) exact matches, in which:
65 unique CDR3
3 unique J



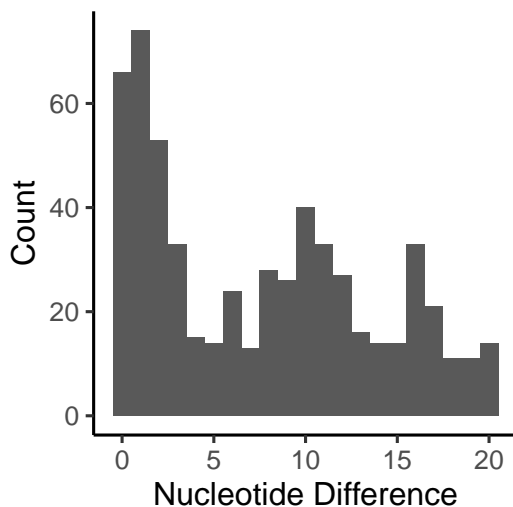
IGHV3-172*01_S8824

497 sequences assigned
27 (5.4%) exact matches, in which:
16 unique CDR3
2 unique J



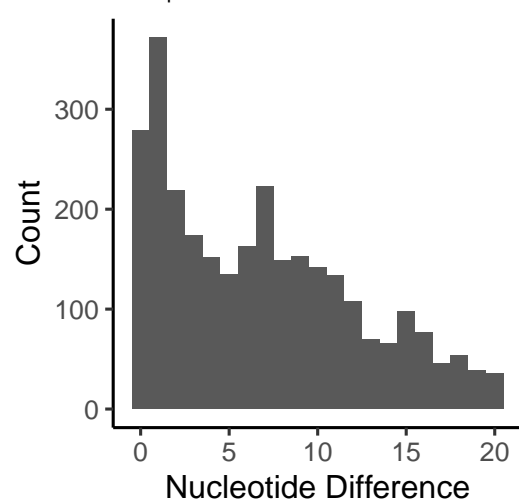
IGHV3-177*01_S8409

656 sequences assigned
66 (10.1%) exact matches, in which:
46 unique CDR3
4 unique J



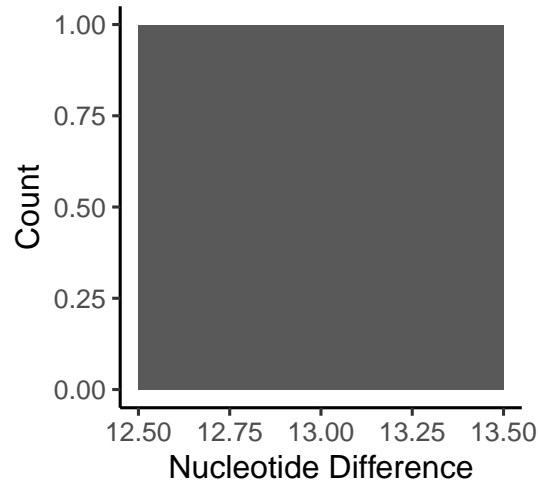
IGHV3-NL_1*01_S9854

3448 sequences assigned
279 (8.1%) exact matches, in which:
165 unique CDR3
6 unique J



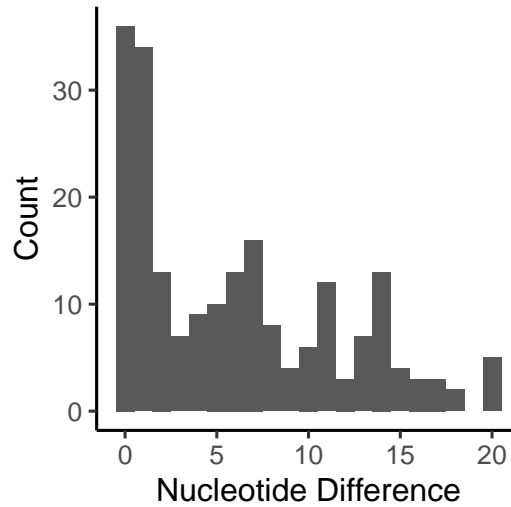
IGHV3-NL_10*02_S2212

1 sequences assigned
No exact matches.



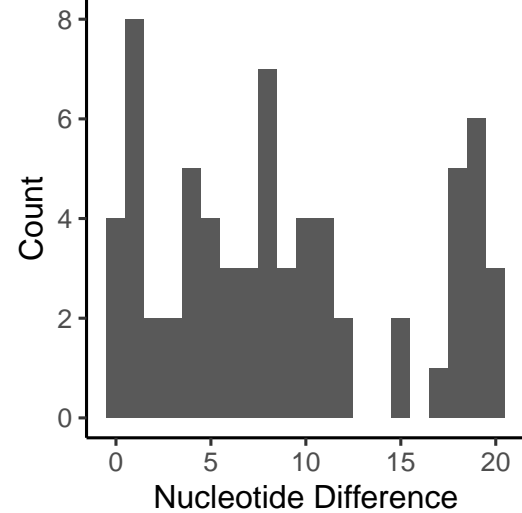
IGHV3-NL_12*02_S1760

218 sequences assigned
36 (16.5%) exact matches, in which:
24 unique CDR3
2 unique J



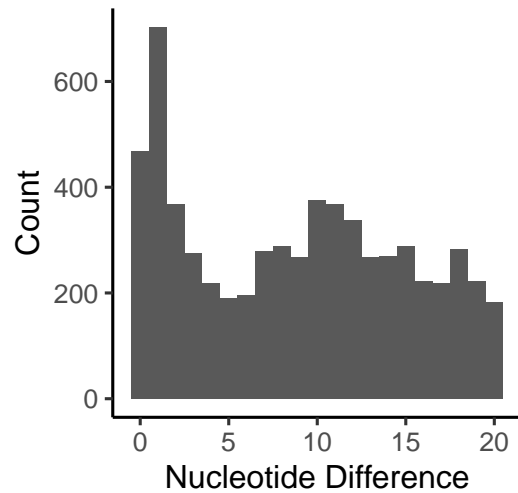
IGHV3-NL_16*01_S8234

75 sequences assigned
4 (5.3%) exact matches, in which:
3 unique CDR3
2 unique J



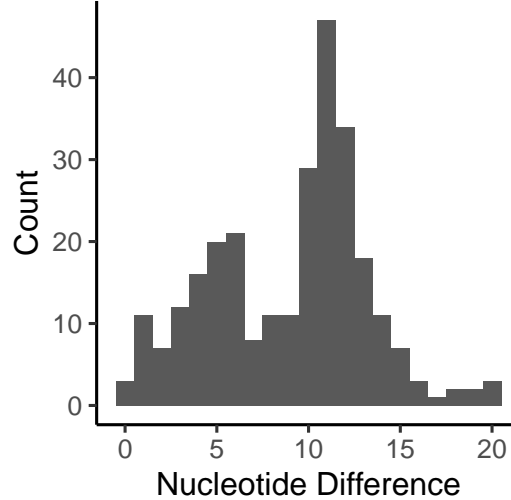
IGHV3-NL_11*01_S3736

7622 sequences assigned
468 (6.1%) exact matches, in which:
303 unique CDR3
6 unique J



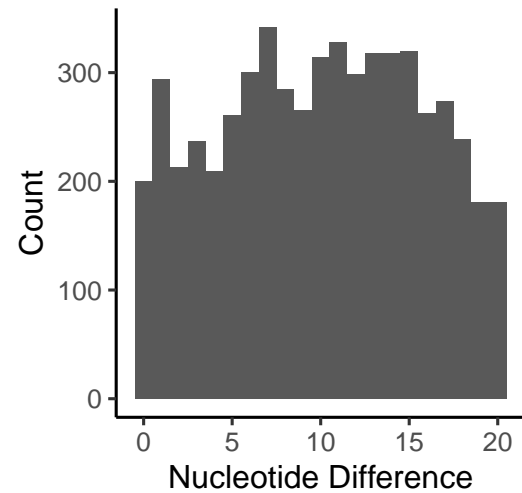
IGHV3-NL_13*01_S3277

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



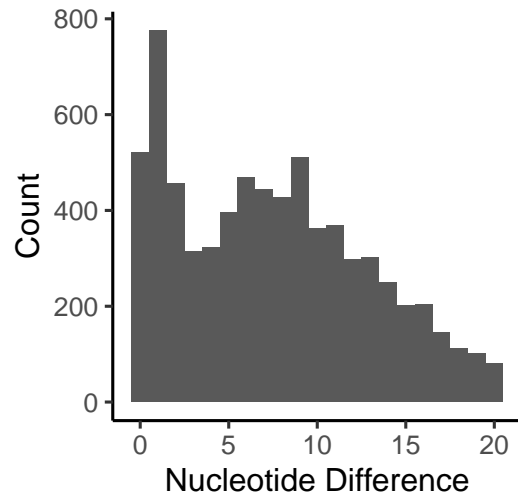
IGHV3-NL_17*01_S1160

6592 sequences assigned
200 (3%) exact matches, in which:
125 unique CDR3
3 unique J



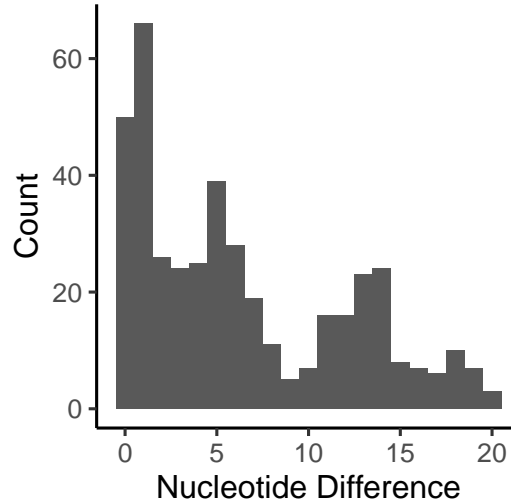
IGHV3-NL_11*01_S8670

7784 sequences assigned
520 (6.7%) exact matches, in which:
330 unique CDR3
6 unique J



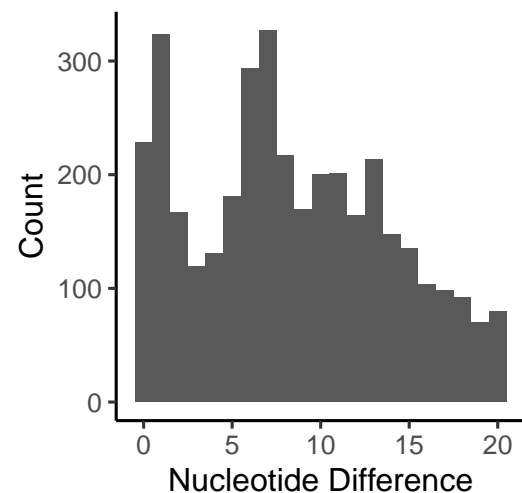
IGHV3-NL_14*01_S7988

461 sequences assigned
50 (10.8%) exact matches, in which:
33 unique CDR3
4 unique J



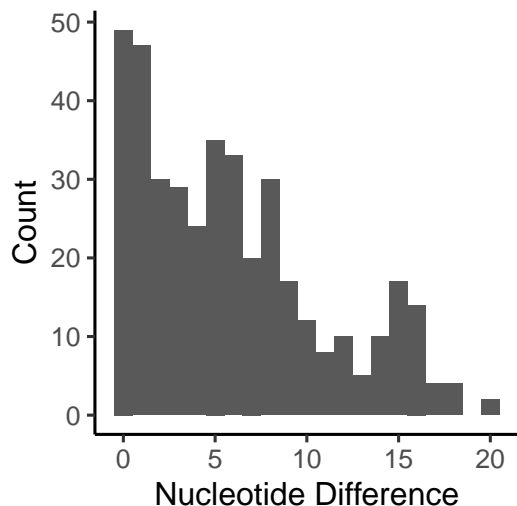
IGHV3-NL_17*01_S4250

4065 sequences assigned
228 (5.6%) exact matches, in which:
136 unique CDR3
4 unique J



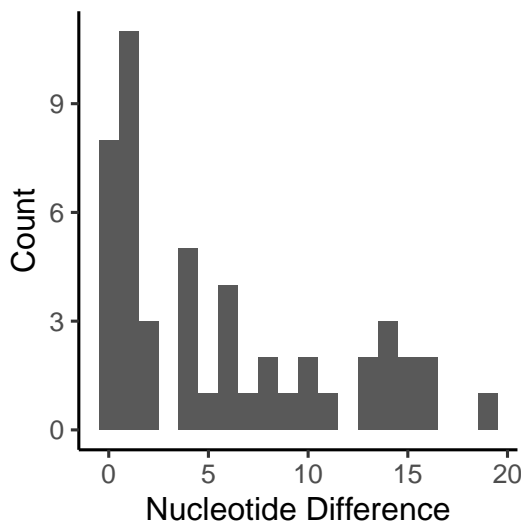
IGHV3–NL_18*01_S5825

406 sequences assigned
49 (12.1%) exact matches, in which:
36 unique CDR3
3 unique J



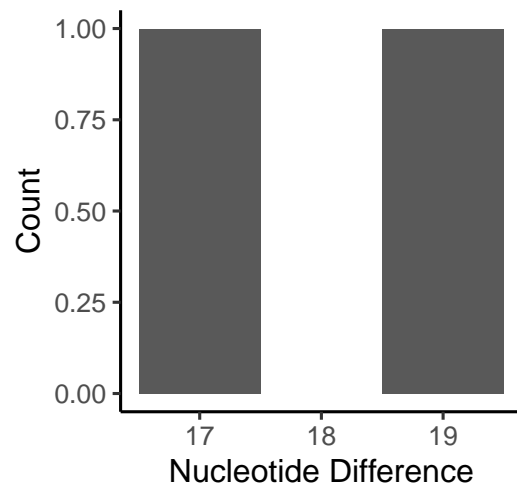
IGHV3–NL_2*01_S3900

60 sequences assigned
8 (13.3%) exact matches, in which:
6 unique CDR3
2 unique J



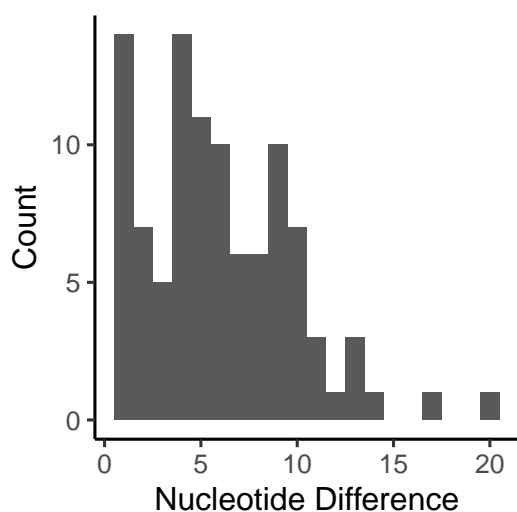
IGHV3–NL_5*01_S8361

3 sequences assigned
No exact matches.



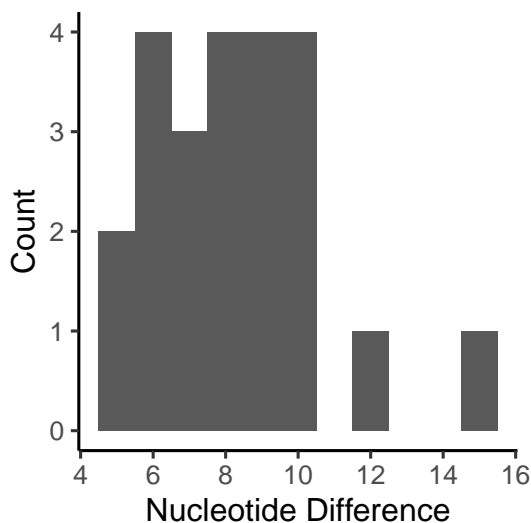
IGHV3–NL_18*01_S6383

102 sequences assigned
No exact matches.



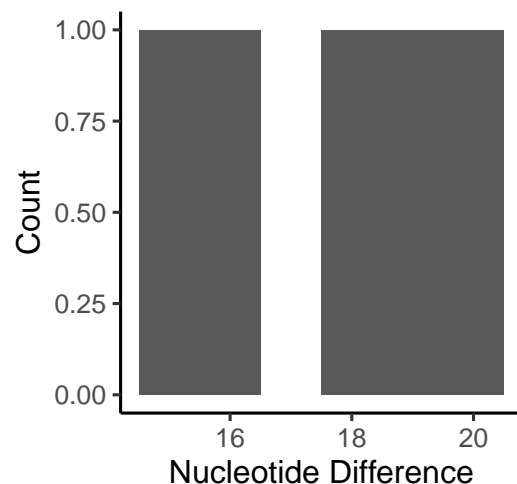
IGHV3–NL_2*01_S6117

26 sequences assigned
No exact matches.



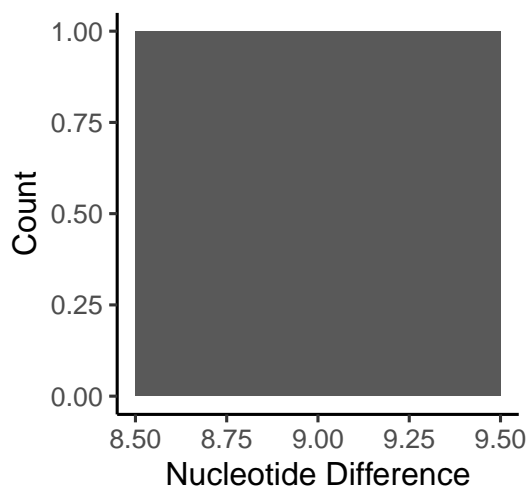
IGHV3–NL_6*02_S7808

6 sequences assigned
No exact matches.



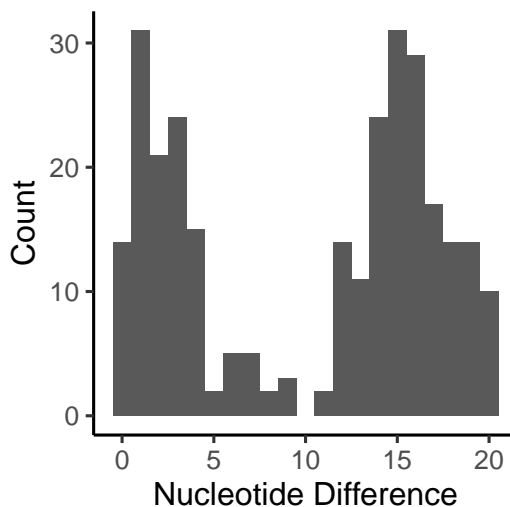
IGHV3–NL_19*01_S5460

1 sequences assigned
No exact matches.



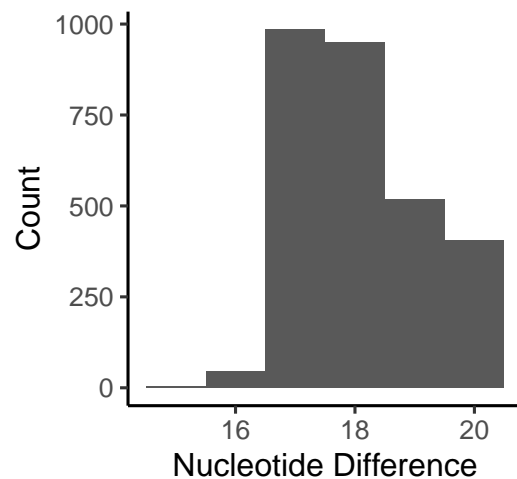
IGHV3–NL_4*01_S9392

525 sequences assigned
14 (2.7%) exact matches, in which:
11 unique CDR3
3 unique J



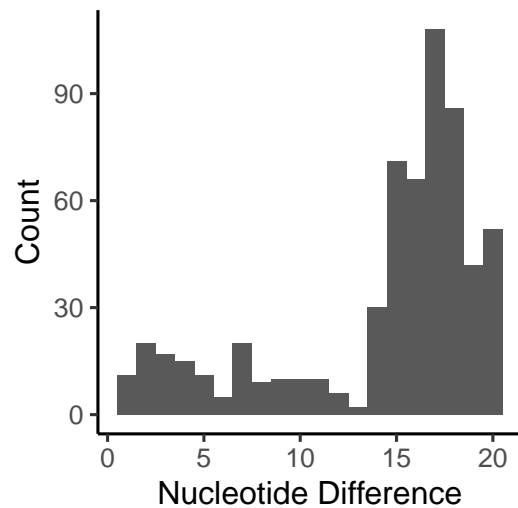
IGHV3–NL_7*01_S0199

8345 sequences assigned
No exact matches.



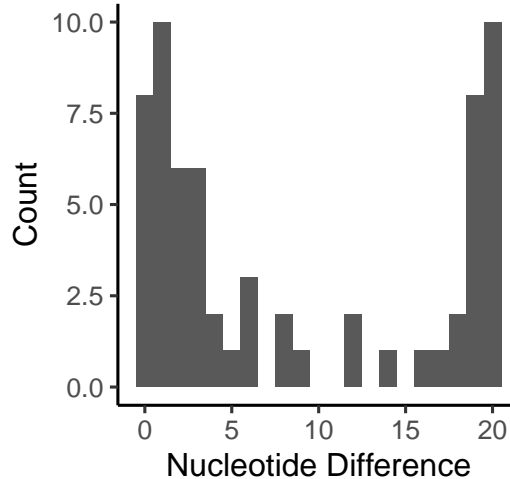
IGHV3–NL_8*01_S7474

1363 sequences assigned
No exact matches.



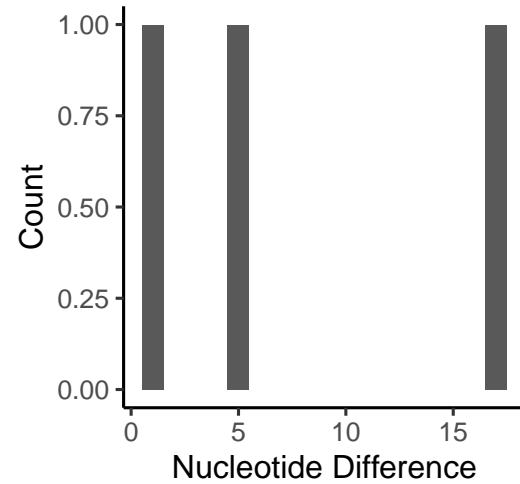
IGHV4–67*01_S8827

89 sequences assigned
8 (9%) exact matches, in which:
8 unique CDR3
4 unique J



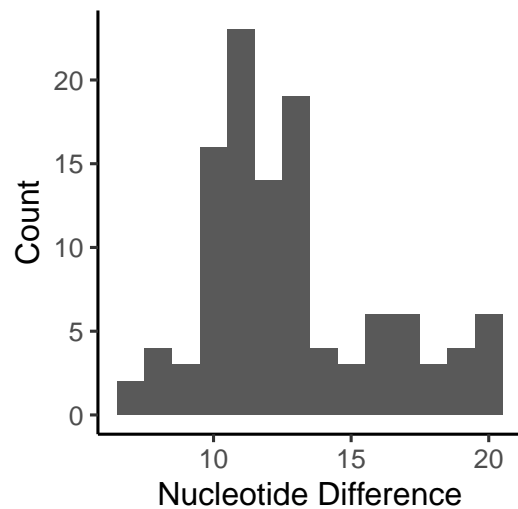
IGHV4–79*02_S9501

8 sequences assigned
No exact matches.



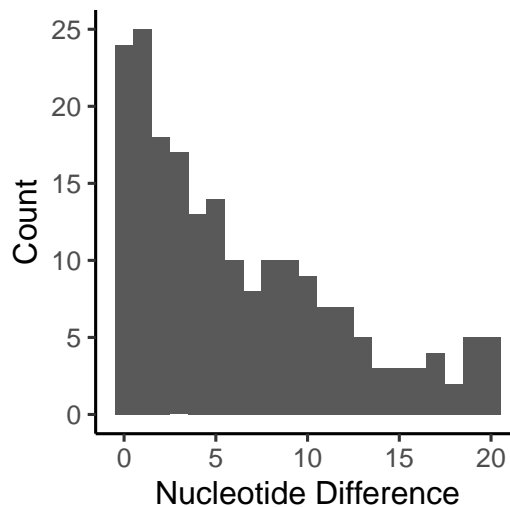
IGHV3–NL_8*01_S9578

282 sequences assigned
No exact matches.



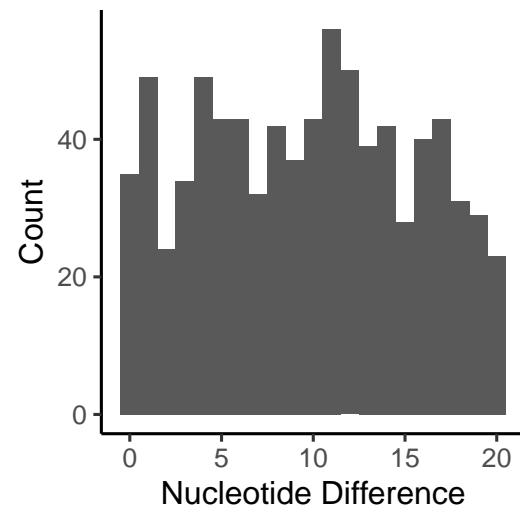
IGHV4–67*02_S8878

270 sequences assigned
24 (8.9%) exact matches, in which:
21 unique CDR3
4 unique J



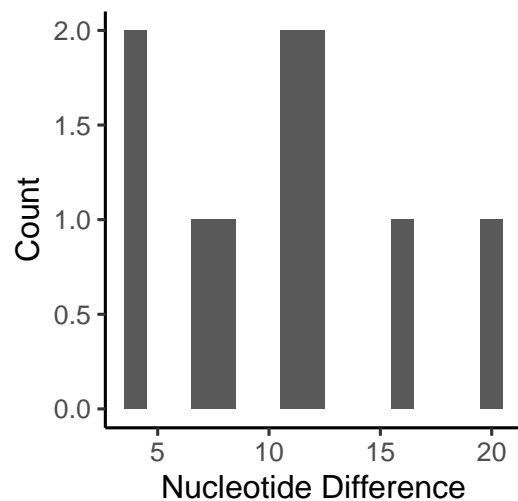
IGHV4–93*01_S1164

958 sequences assigned
35 (3.7%) exact matches, in which:
30 unique CDR3
4 unique J



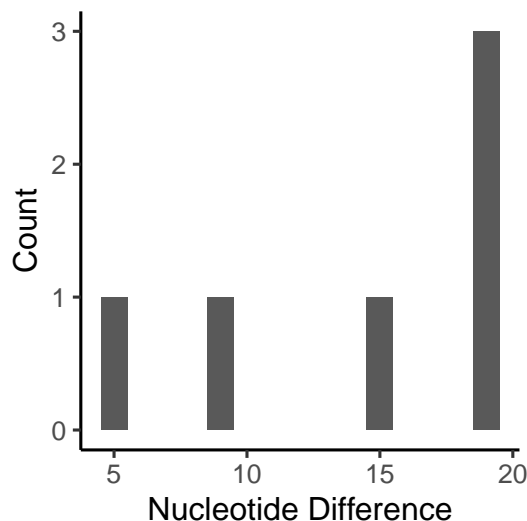
IGHV3–NL_9*01_S6098

30 sequences assigned
No exact matches.



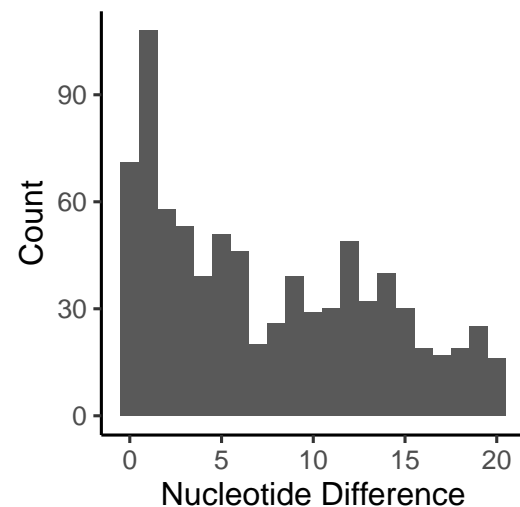
IGHV4–72*01_S2051

9 sequences assigned
No exact matches.



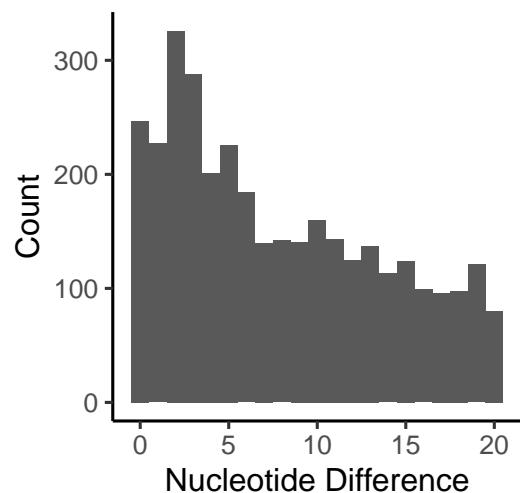
IGHV4–117*01_S1924

926 sequences assigned
71 (7.7%) exact matches, in which:
50 unique CDR3
5 unique J



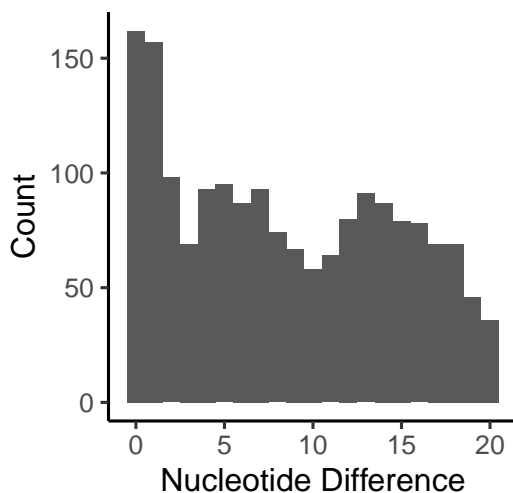
IGHV4-117*01_S2932

3769 sequences assigned
247 (6.6%) exact matches, in which:
195 unique CDR3
5 unique J



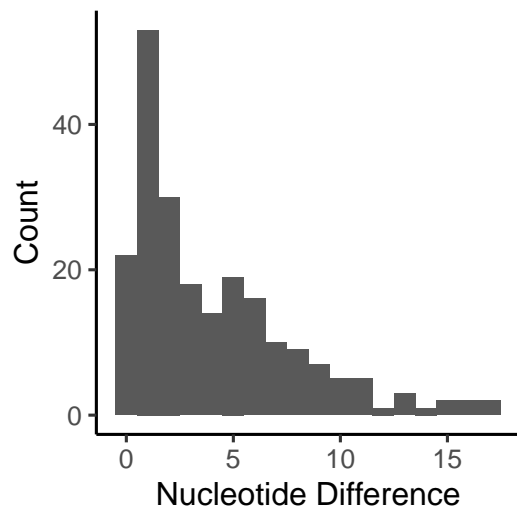
IGHV4-149*01_S6502

2150 sequences assigned
162 (7.5%) exact matches, in which:
128 unique CDR3
6 unique J



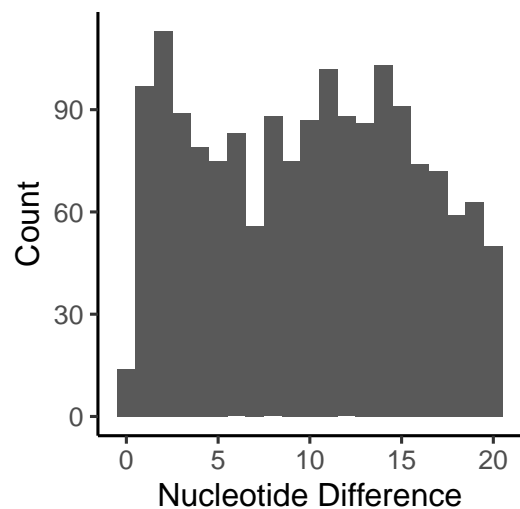
IGHV4-150*01_S2344

225 sequences assigned
22 (9.8%) exact matches, in which:
20 unique CDR3
5 unique J



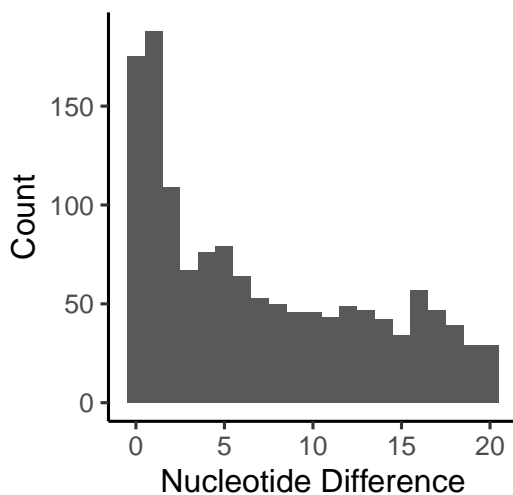
IGHV4-144*01_S9923

2200 sequences assigned
14 (0.6%) exact matches, in which:
11 unique CDR3
2 unique J



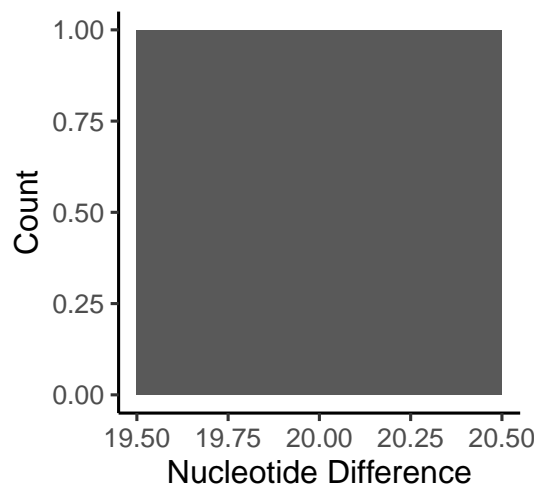
IGHV4-149*01_S8526

1628 sequences assigned
175 (10.7%) exact matches, in which:
141 unique CDR3
5 unique J



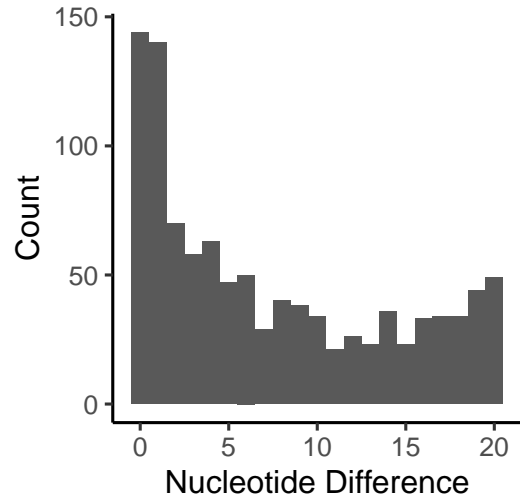
IGHV4-174*02_S3984

1 sequences assigned
No exact matches.



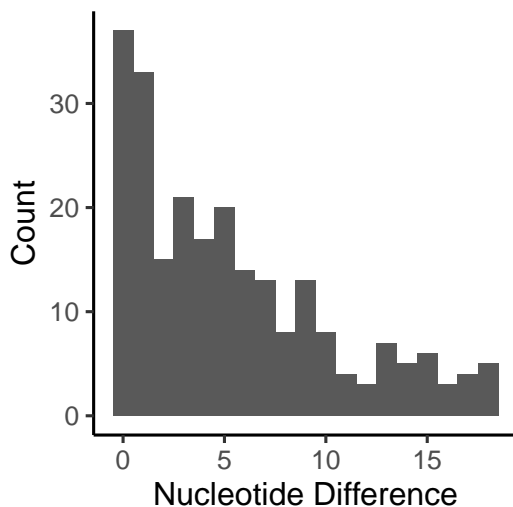
IGHV4-149*01_S1430

1353 sequences assigned
144 (10.6%) exact matches, in which:
112 unique CDR3
5 unique J



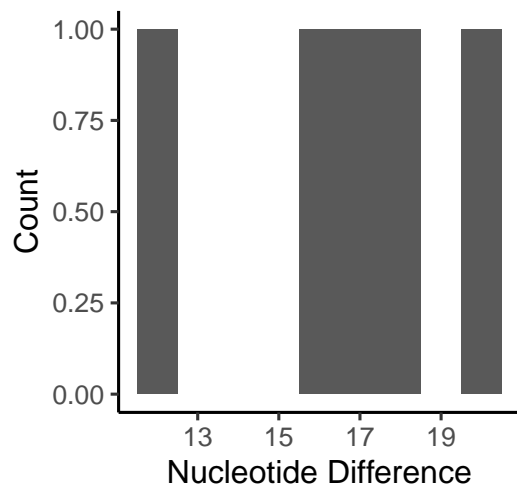
IGHV4-150*01_S2067

256 sequences assigned
37 (14.5%) exact matches, in which:
27 unique CDR3
4 unique J



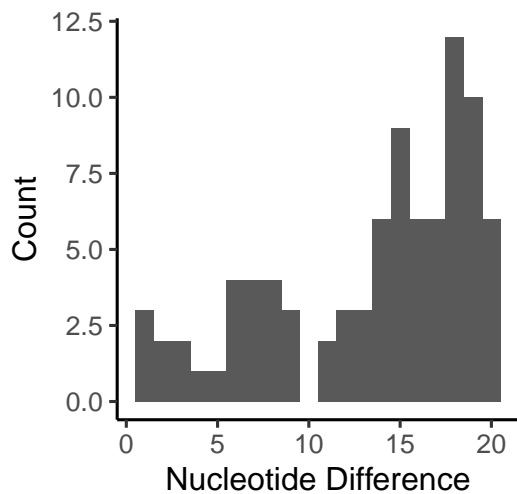
IGHV4-174*02_S5400

59 sequences assigned
No exact matches.



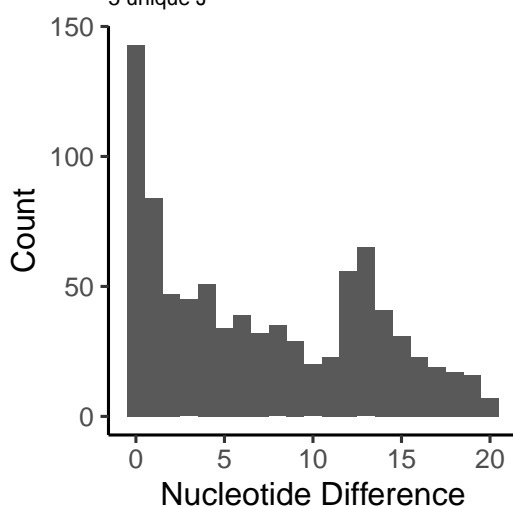
IGHV4–NL_1*01_S1593

150 sequences assigned
No exact matches.



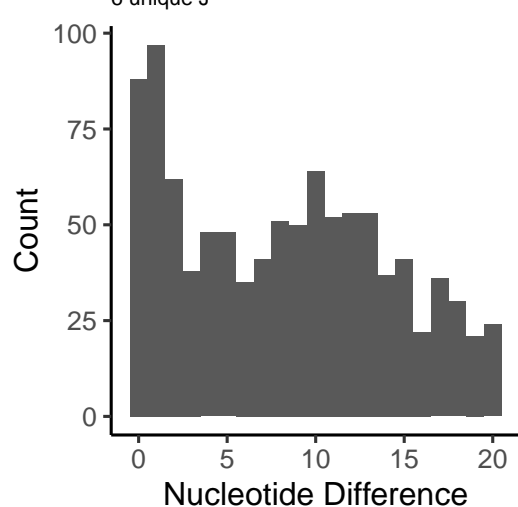
IGHV4–NL_10*01_S7684

998 sequences assigned
143 (14.3%) exact matches, in which:
118 unique CDR3
5 unique J



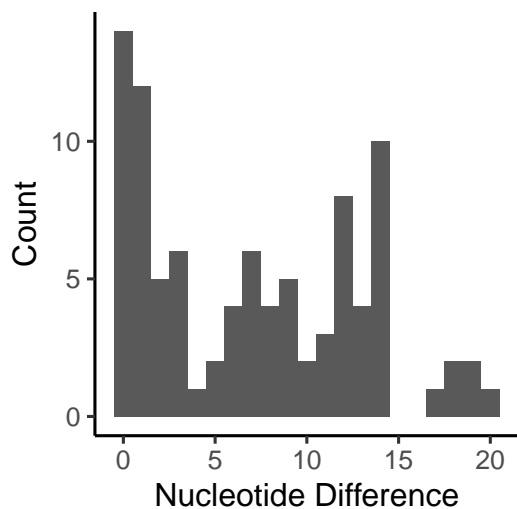
IGHV4–NL_10*02_S9348

1194 sequences assigned
88 (7.4%) exact matches, in which:
75 unique CDR3
6 unique J



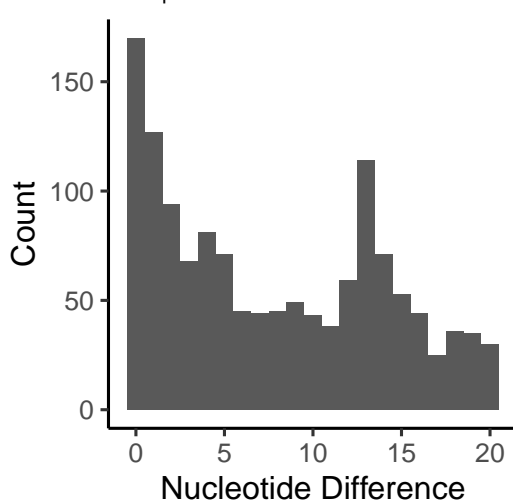
IGHV4–NL_1*01_S4155

96 sequences assigned
14 (14.6%) exact matches, in which:
13 unique CDR3
4 unique J



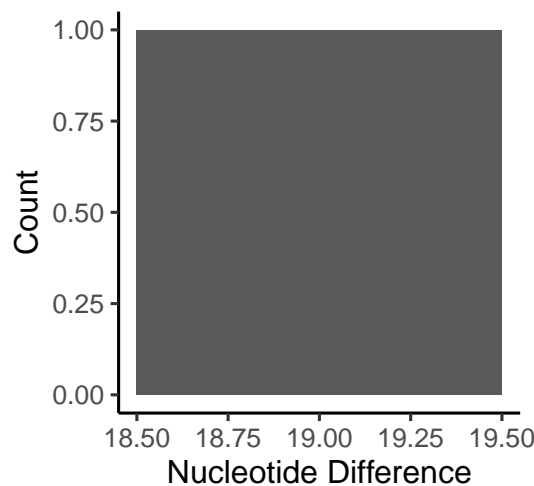
IGHV4–NL_10*01_S7684

1572 sequences assigned
170 (10.8%) exact matches, in which:
142 unique CDR3
6 unique J



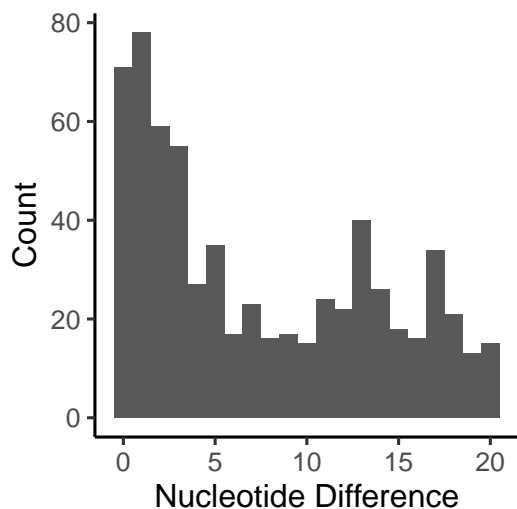
IGHV4–NL_11*01_S4651

1 sequences assigned
No exact matches.



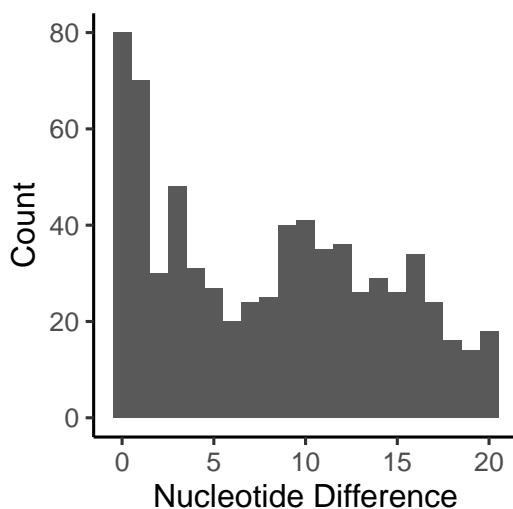
IGHV4–NL_1*01_S9508

728 sequences assigned
71 (9.8%) exact matches, in which:
65 unique CDR3
4 unique J



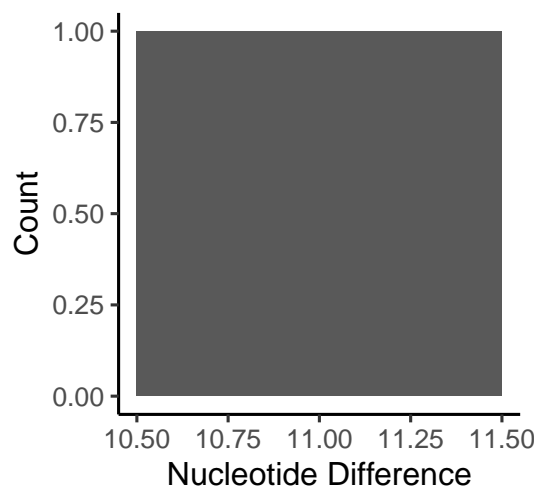
IGHV4–NL_10*02_S9348

846 sequences assigned
80 (9.5%) exact matches, in which:
70 unique CDR3
6 unique J



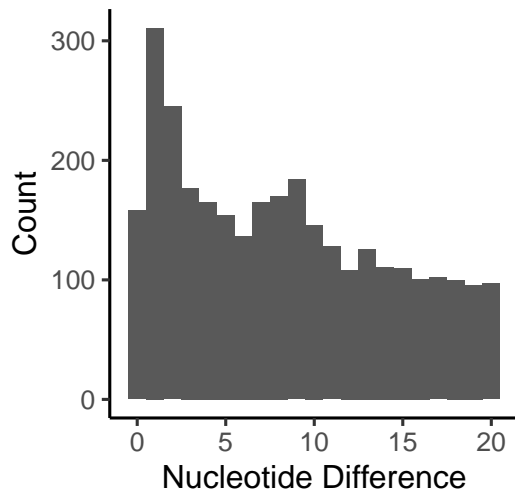
IGHV4–NL_11*01_S9942

1 sequences assigned
No exact matches.



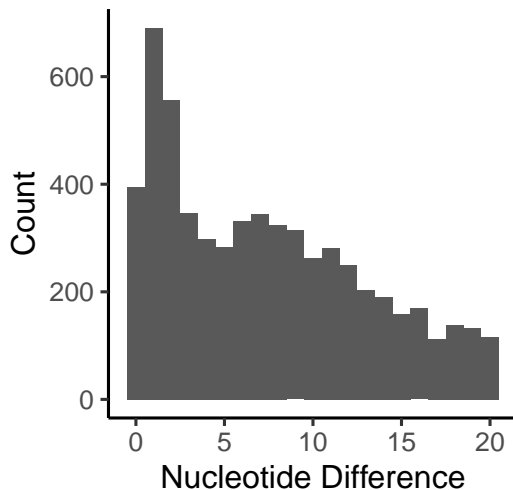
IGHV4–NL_12*01_S5174

3588 sequences assigned
158 (4.4%) exact matches, in which:
142 unique CDR3
5 unique J



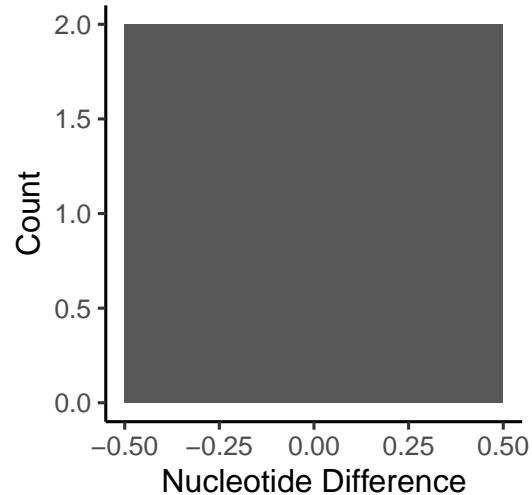
IGHV4–NL_16*01_S2138

6622 sequences assigned
395 (6%) exact matches, in which:
337 unique CDR3
6 unique J



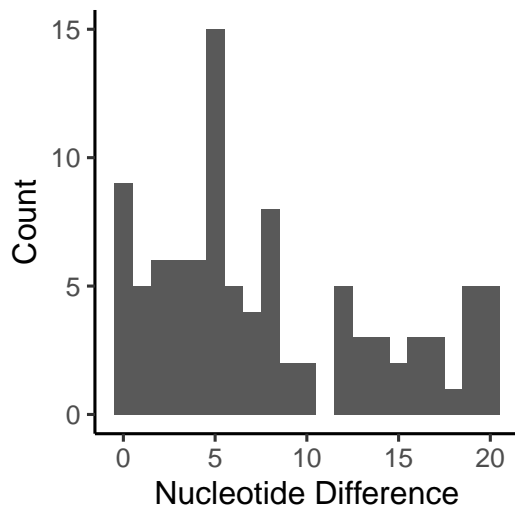
IGHV4–NL_19*01_S2661

2 sequences assigned
2 (100%) exact matches, in which:
2 unique CDR3
1 unique J



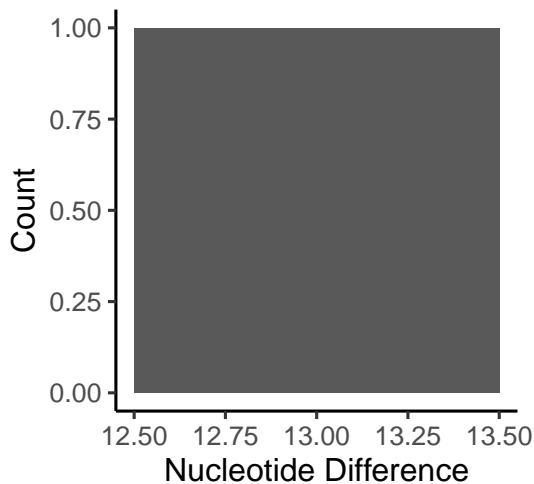
IGHV4–NL_13*01_S9624

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



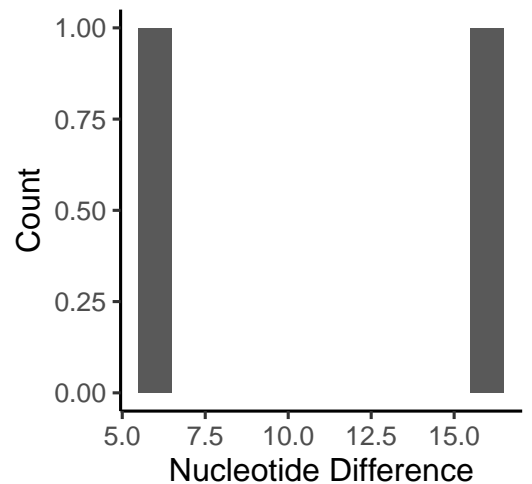
IGHV4–NL_17*01_S0904

1 sequences assigned
No exact matches.



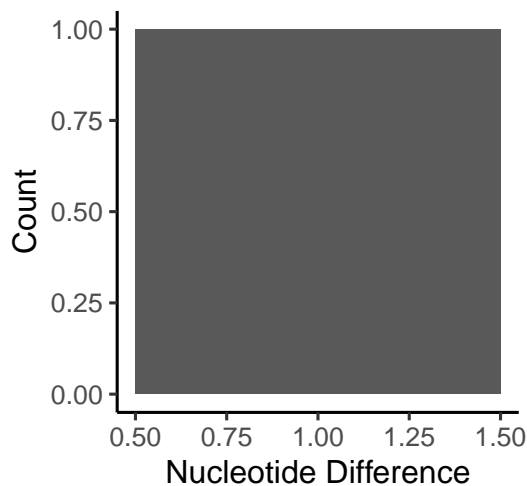
IGHV4–NL_20*01_S0030

2 sequences assigned
No exact matches.



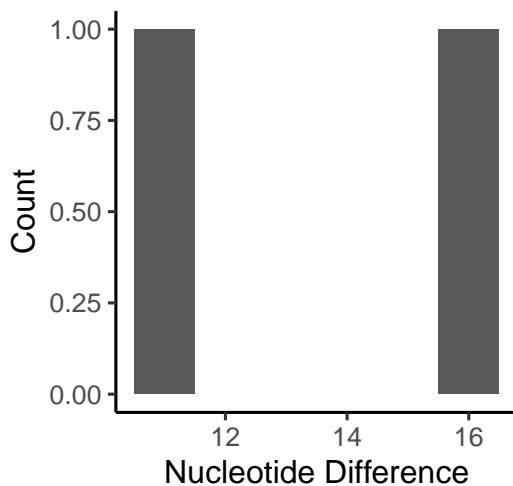
IGHV4–NL_15*01_S5717

1 sequences assigned
No exact matches.



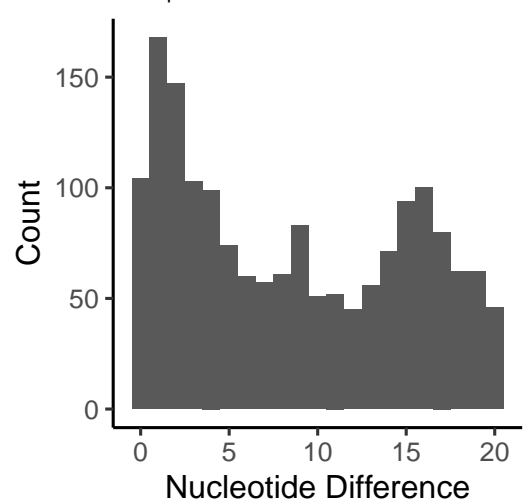
IGHV4–NL_17*01_S4095

2 sequences assigned
No exact matches.



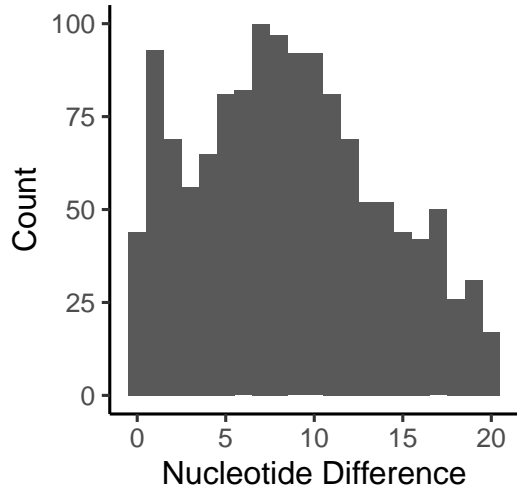
IGHV4–NL_21*01_S0138

2011 sequences assigned
104 (5.2%) exact matches, in which:
86 unique CDR3
5 unique J



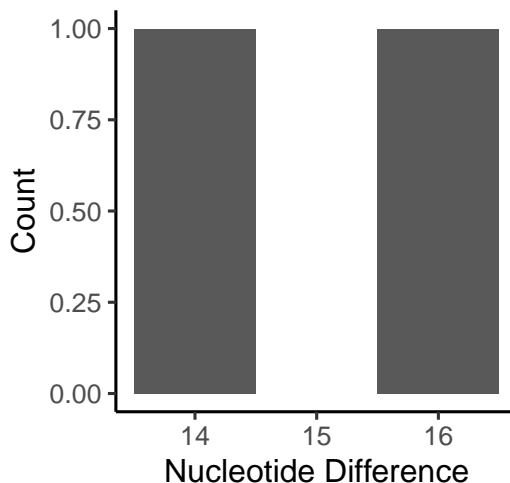
IGHV4–NL_22*01_S9255

1461 sequences assigned
44 (3%) exact matches, in which:
38 unique CDR3
5 unique J



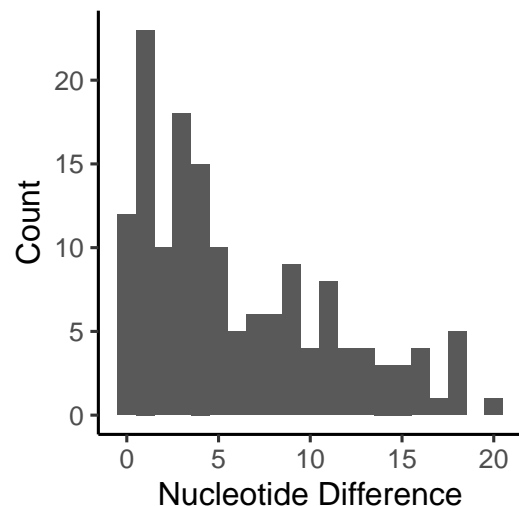
IGHV4–NL_26*01_S2267

2 sequences assigned
No exact matches.



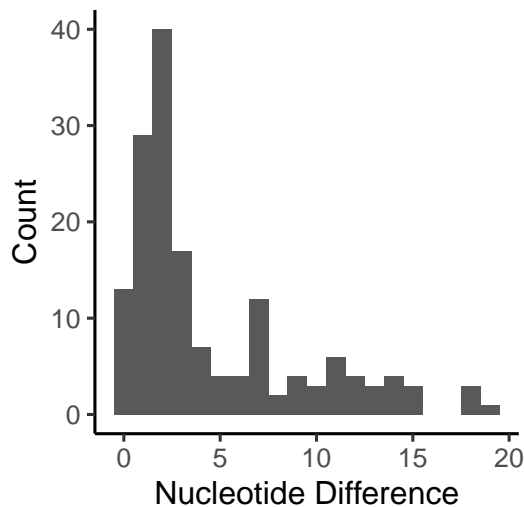
IGHV4–NL_28*01_S8057

183 sequences assigned
12 (6.6%) exact matches, in which:
11 unique CDR3
2 unique J



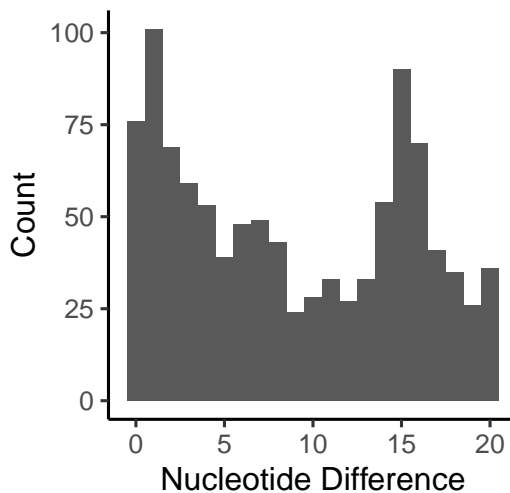
IGHV4–NL_24*01_S2784

161 sequences assigned
13 (8.1%) exact matches, in which:
11 unique CDR3
3 unique J



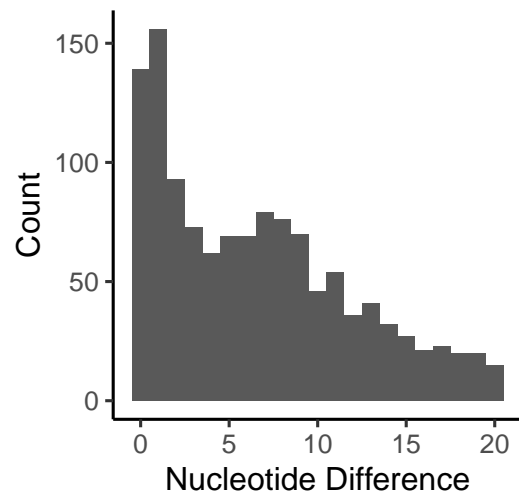
IGHV4–NL_27*01_S7150

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



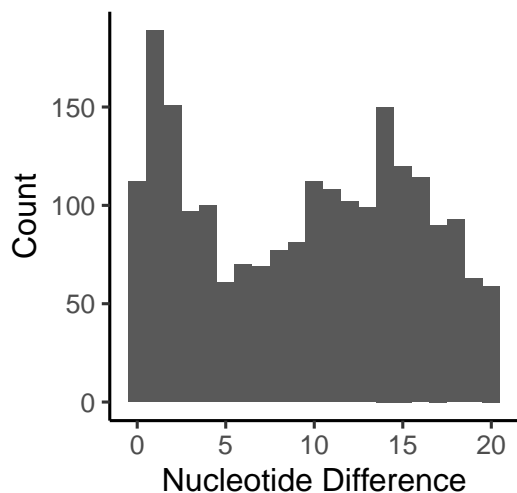
IGHV4–NL_31*01_S7693

1289 sequences assigned
139 (10.8%) exact matches, in which:
109 unique CDR3
5 unique J



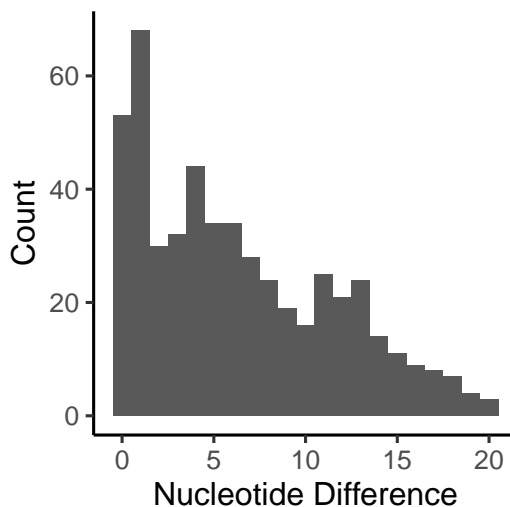
IGHV4–NL_25*01_S9955

2567 sequences assigned
112 (4.4%) exact matches, in which:
91 unique CDR3
5 unique J



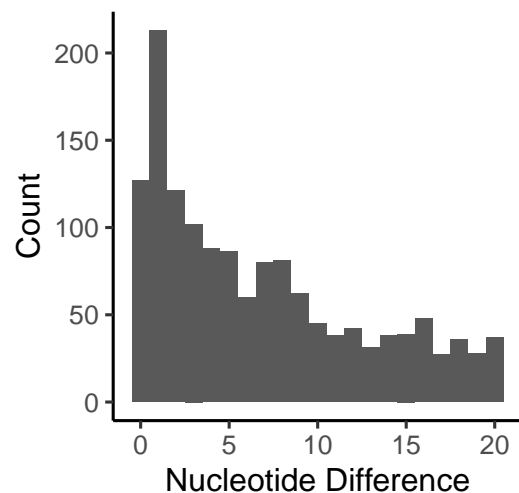
IGHV4–NL_27*01_S9596

530 sequences assigned
53 (10%) exact matches, in which:
38 unique CDR3
4 unique J



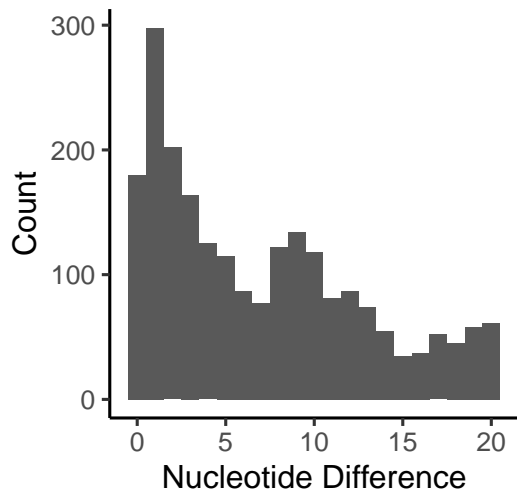
IGHV4–NL_33*01_S1148

1845 sequences assigned
127 (6.9%) exact matches, in which:
111 unique CDR3
6 unique J



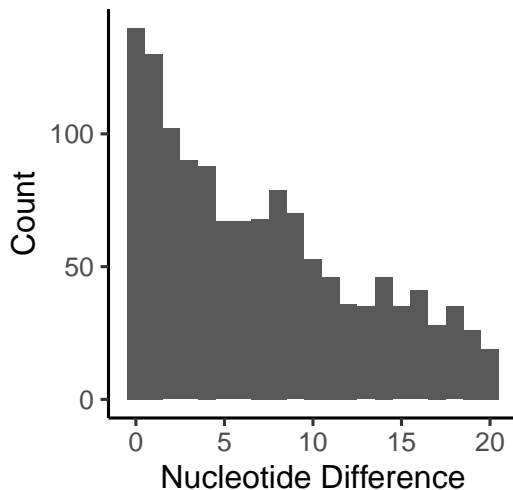
IGHV4–NL_33*01_S8127

2610 sequences assigned
180 (6.9%) exact matches, in which:
157 unique CDR3
5 unique J



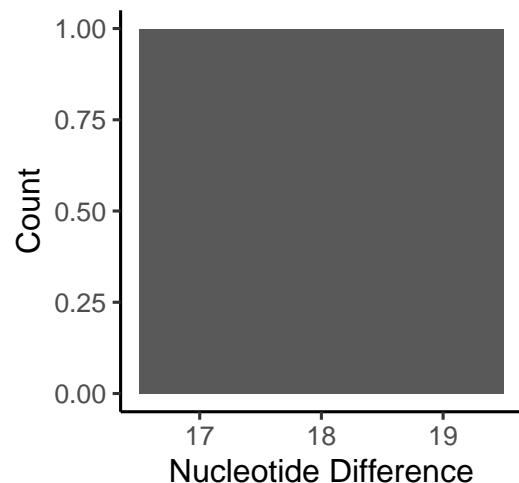
IGHV4–NL_36*01_S9644

1746 sequences assigned
140 (8%) exact matches, in which:
109 unique CDR3
5 unique J



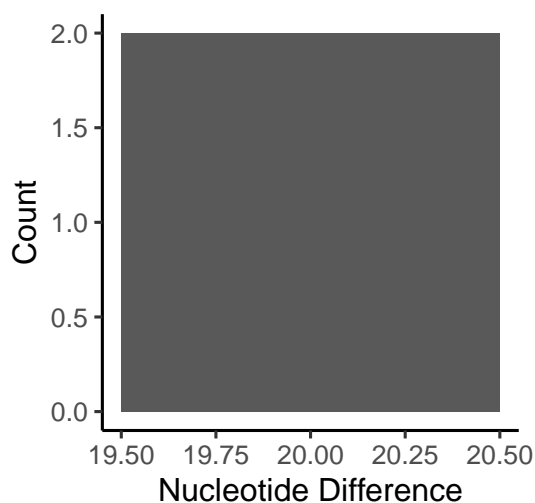
IGHV4–NL_4*01_S5211

7 sequences assigned
No exact matches.



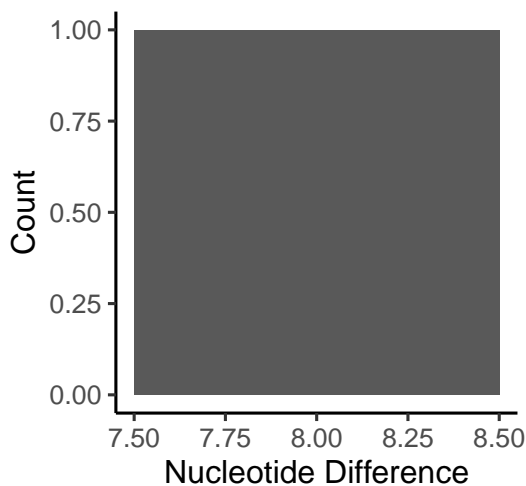
IGHV4–NL_34*01_S4637

2 sequences assigned
No exact matches.



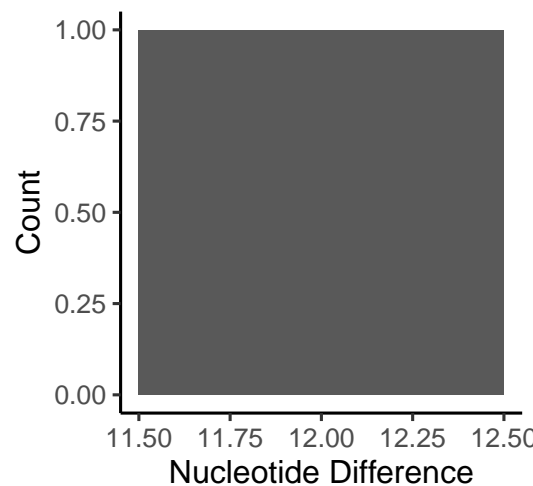
IGHV4–NL_38*01_S5467

1 sequences assigned
No exact matches.



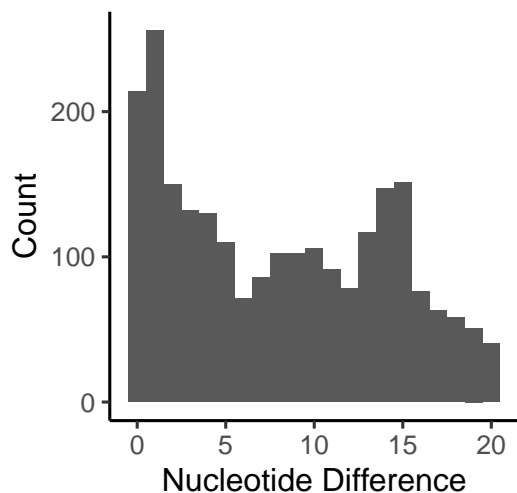
IGHV4–NL_40*01_S0690

1 sequences assigned
No exact matches.



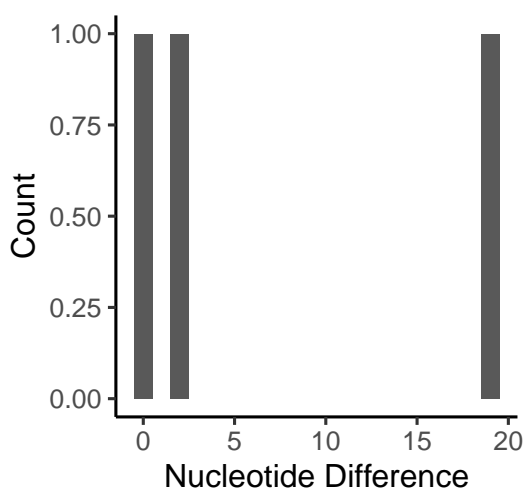
IGHV4–NL_36*01_S5847

2539 sequences assigned
214 (8.4%) exact matches, in which:
174 unique CDR3
5 unique J



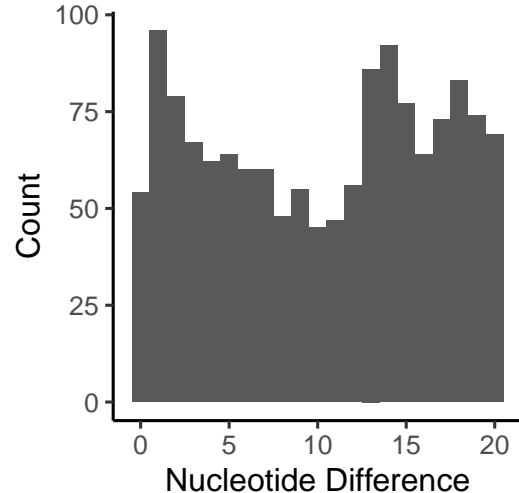
IGHV4–NL_38*01_S8437

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



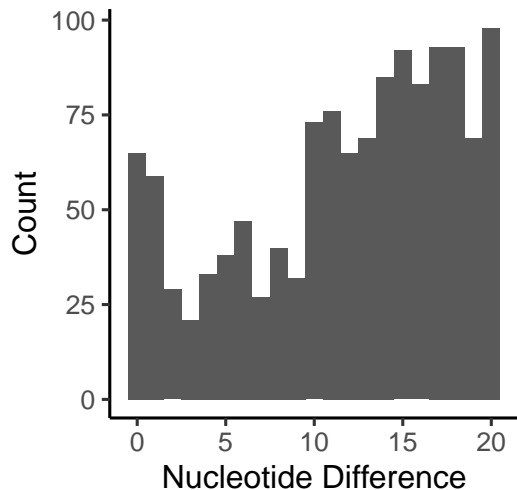
IGHV4–NL_43*01_S4510

1751 sequences assigned
54 (3.1%) exact matches, in which:
46 unique CDR3
5 unique J



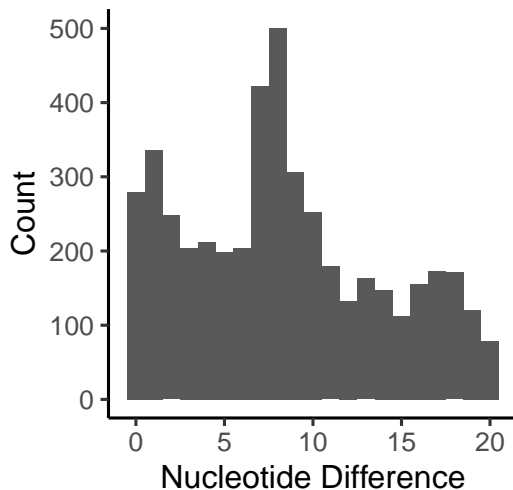
IGHV4–NL_5*01_S5158

1655 sequences assigned
65 (3.9%) exact matches, in which:
55 unique CDR3
6 unique J



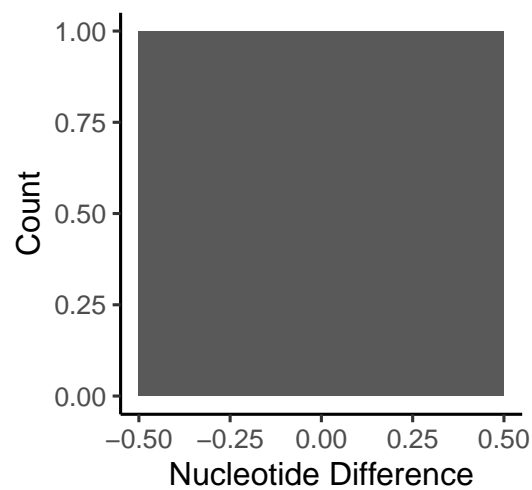
IGHV5–157*02_S5108

5187 sequences assigned
279 (5.4%) exact matches, in which:
135 unique CDR3
6 unique J



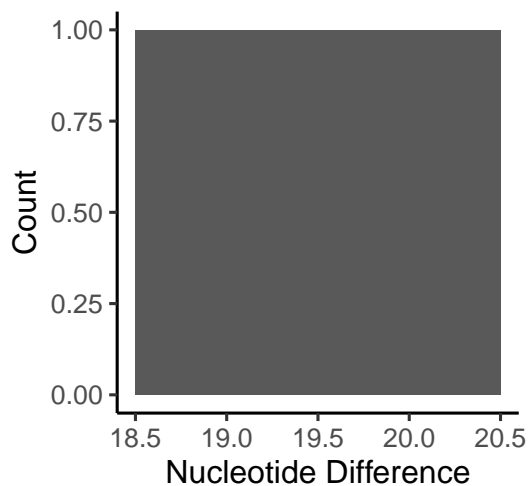
IGHV7–135*02_S1424

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



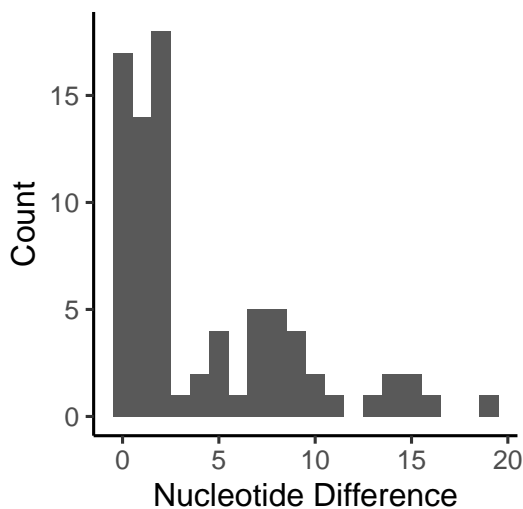
IGHV4–NL_9*01_S4990

3 sequences assigned
No exact matches.



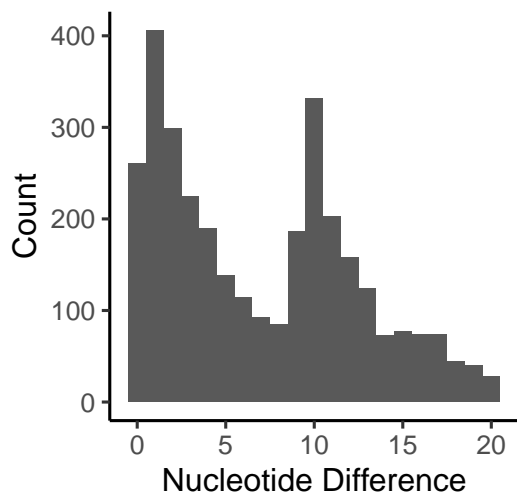
IGHV7–86*01_S6208

82 sequences assigned
17 (20.7%) exact matches, in which:
9 unique CDR3
3 unique J



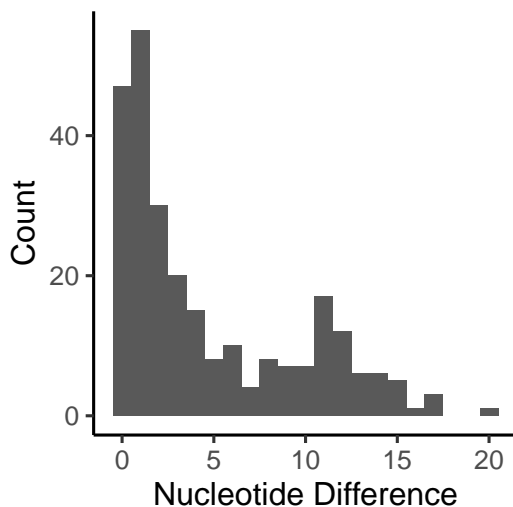
IGHV5–15*01_S8661

3338 sequences assigned
261 (7.8%) exact matches, in which:
157 unique CDR3
6 unique J

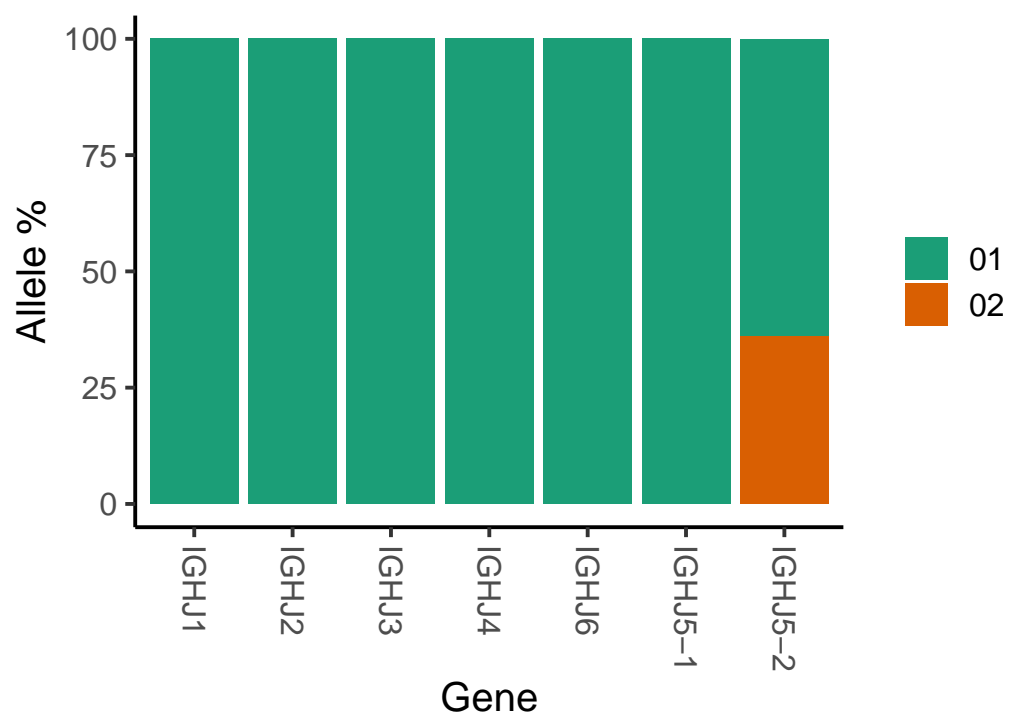


IGHV7–86*01_S8420

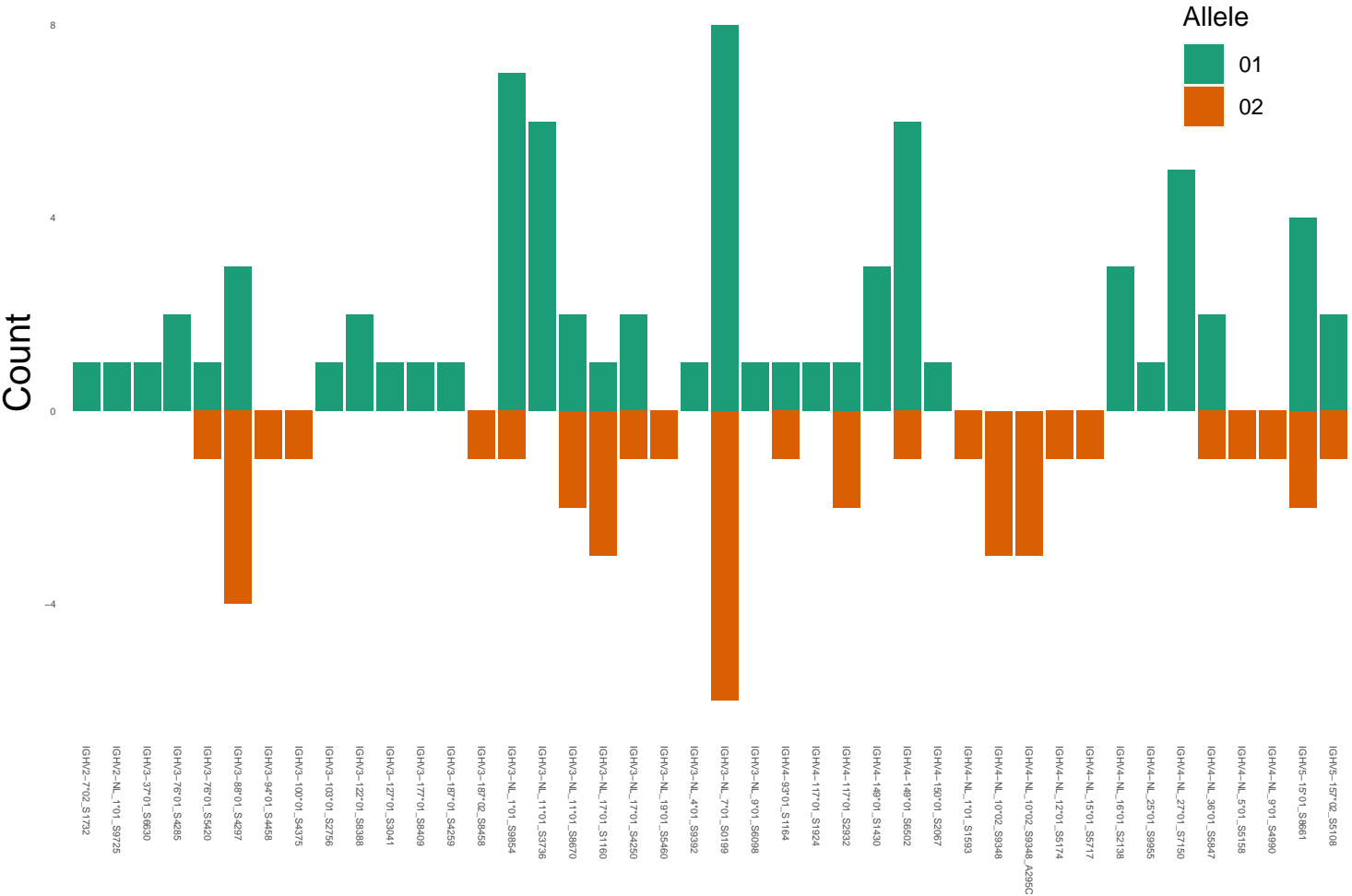
288 sequences assigned
47 (16.3%) exact matches, in which:
31 unique CDR3
3 unique J



Allele Usage



Sequence Count by IGHJ5-2 allele usage



Warning – no inferred sequences found.