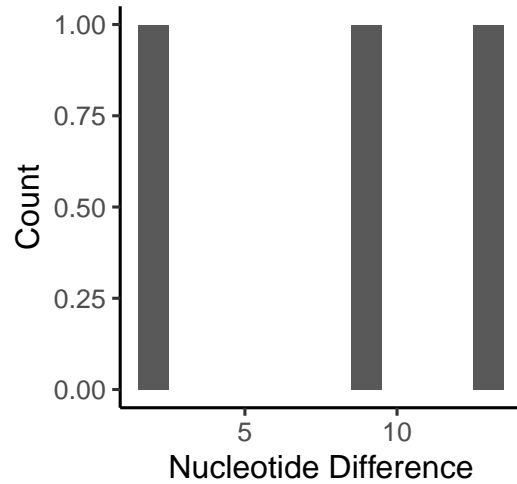


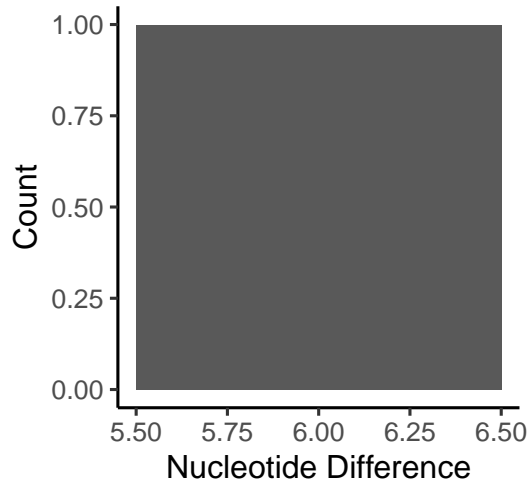
IGHV1-60*01_S7772

4 sequences assigned
No exact matches.



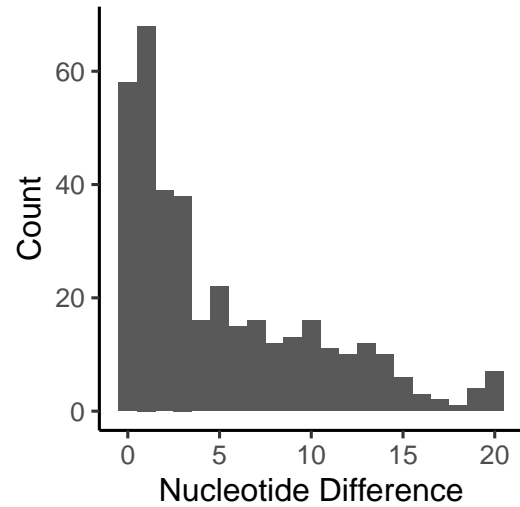
IGHV1-138*01_S2593

6 sequences assigned
No exact matches.



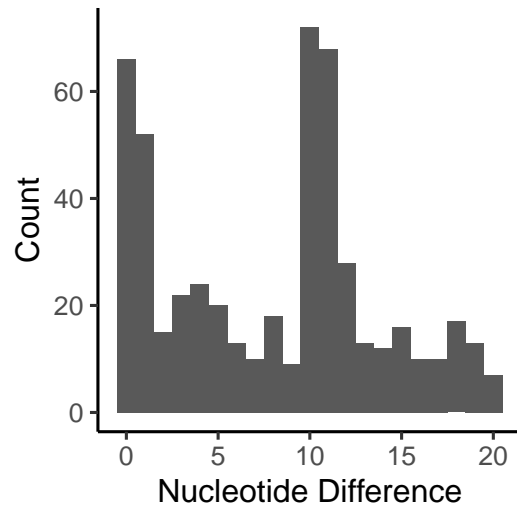
IGHV1-NL_1*01_S6622

384 sequences assigned
58 (15.1%) exact matches, in which:
36 unique CDR3
5 unique J



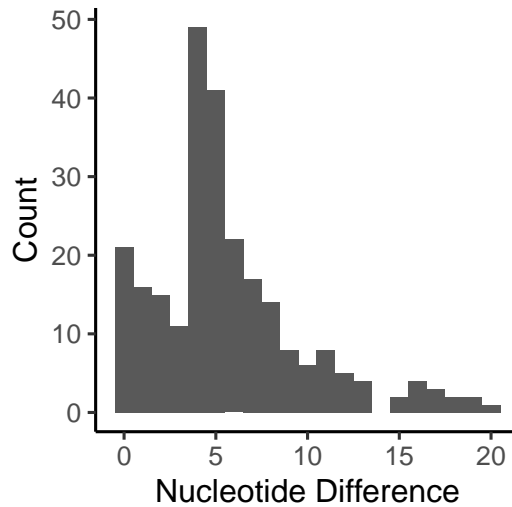
IGHV1-84*01_S2805

616 sequences assigned
66 (10.7%) exact matches, in which:
26 unique CDR3
4 unique J



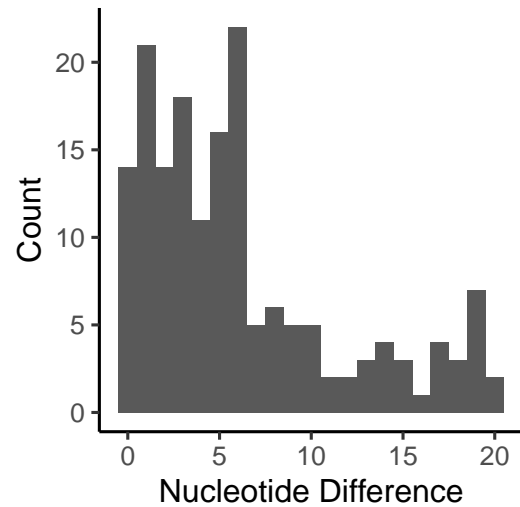
IGHV1-138*01_S3445

260 sequences assigned
21 (8.1%) exact matches, in which:
16 unique CDR3
3 unique J



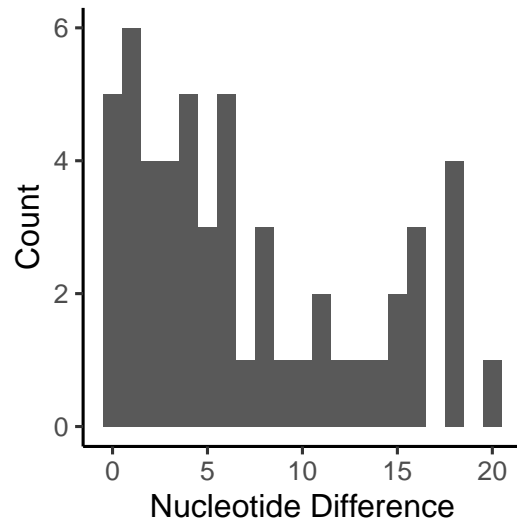
IGHV1-NL_1*01_S8523

192 sequences assigned
14 (7.3%) exact matches, in which:
11 unique CDR3
3 unique J



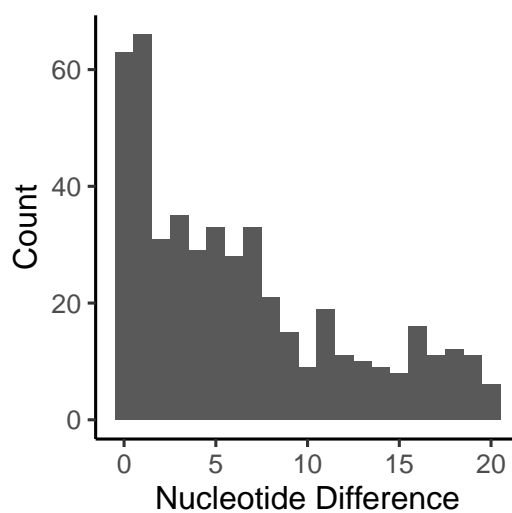
IGHV1-124*01_S1765

64 sequences assigned
5 (7.8%) exact matches, in which:
5 unique CDR3
2 unique J



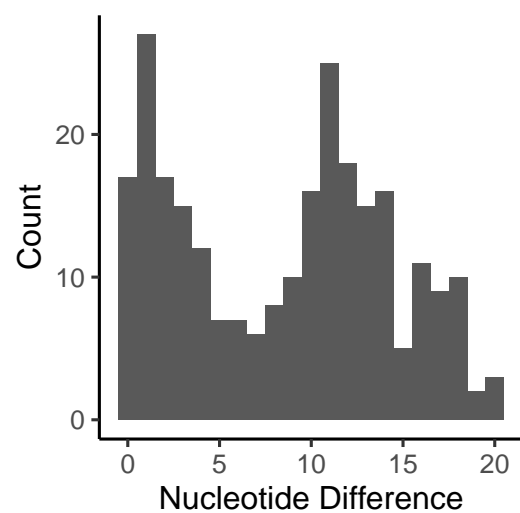
IGHV1-NL_1*01_S2052

549 sequences assigned
63 (11.5%) exact matches, in which:
43 unique CDR3
5 unique J



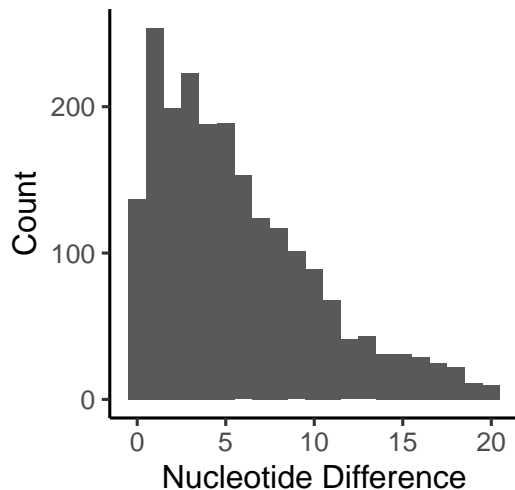
IGHV1-NL_2*01_S3568

301 sequences assigned
17 (5.6%) exact matches, in which:
9 unique CDR3
2 unique J



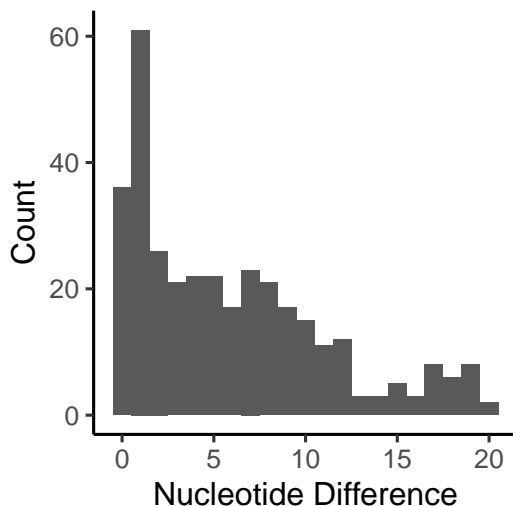
IGHV2-7*02_S1732

2134 sequences assigned
137 (6.4%) exact matches, in which:
86 unique CDR3
4 unique J



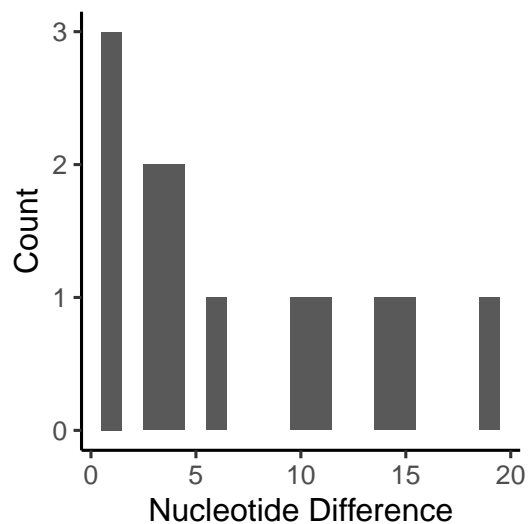
IGHV2-69*01_S2408

364 sequences assigned
36 (9.9%) exact matches, in which:
18 unique CDR3
3 unique J



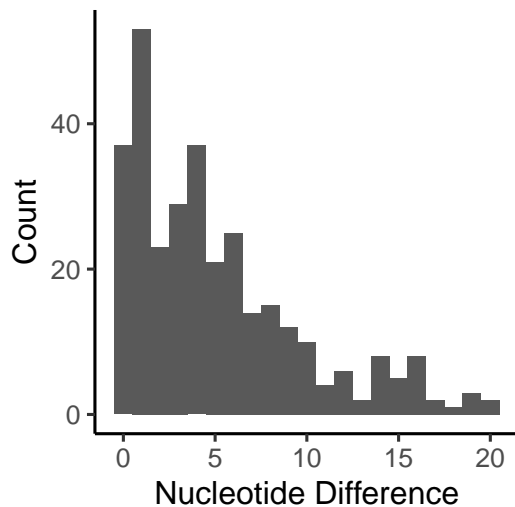
IGHV2-173*01_S2781

13 sequences assigned
No exact matches.



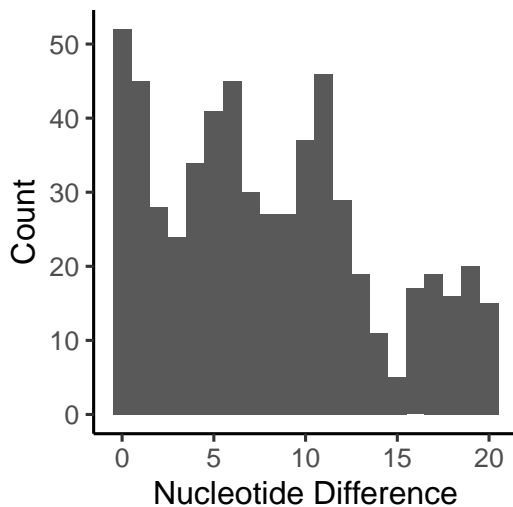
IGHV2-7*02_S4285

326 sequences assigned
37 (11.3%) exact matches, in which:
27 unique CDR3
4 unique J



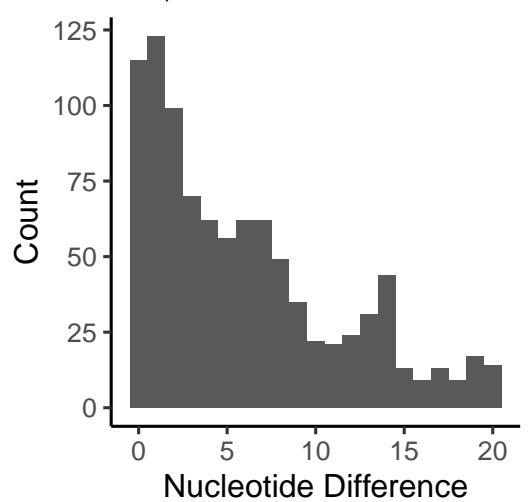
IGHV2-69*01_S6153

639 sequences assigned
52 (8.1%) exact matches, in which:
30 unique CDR3
3 unique J



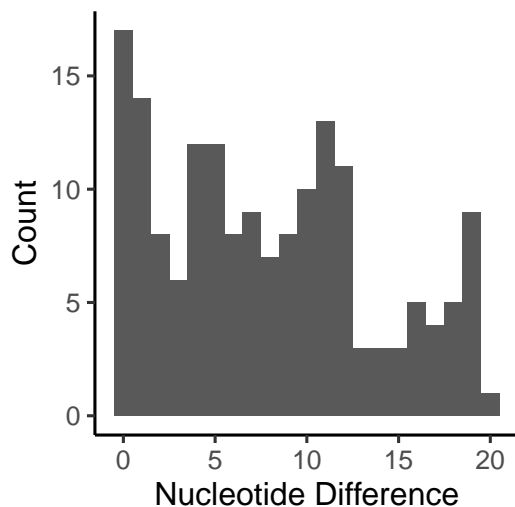
IGHV2-NL_1*01_S5779

1020 sequences assigned
115 (11.3%) exact matches, in which:
68 unique CDR3
5 unique J



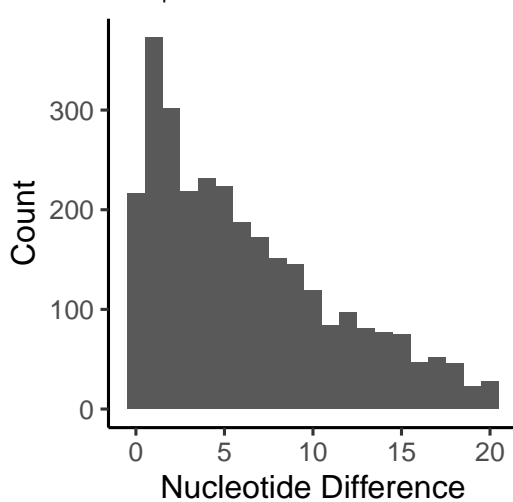
IGHV2-69*01_C6G_C36G

183 sequences assigned
17 (9.3%) exact matches, in which:
17 unique CDR3
3 unique J



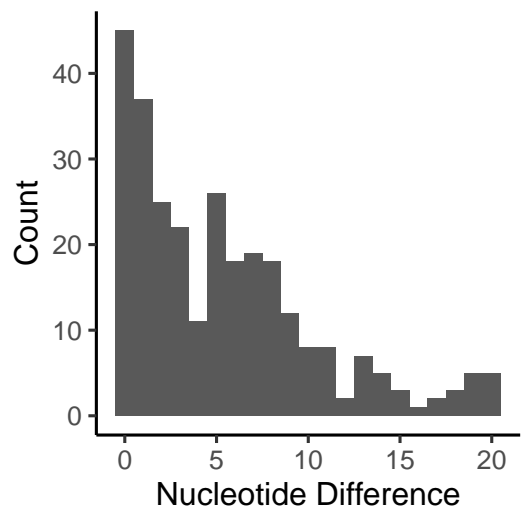
IGHV2-118*01_S4527

3322 sequences assigned
216 (6.5%) exact matches, in which:
134 unique CDR3
5 unique J



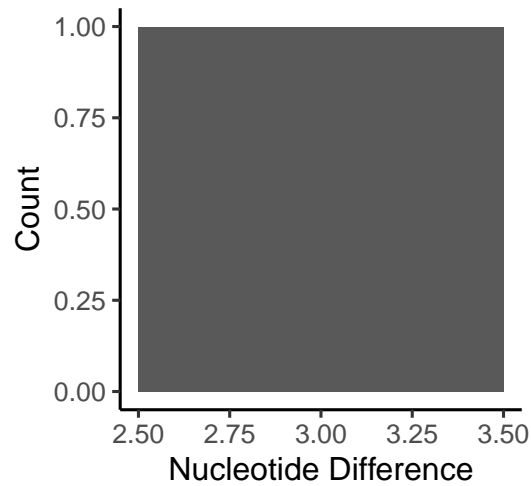
IGHV2-NL_1*01_S5779_C

314 sequences assigned
45 (14.3%) exact matches, in which:
39 unique CDR3
4 unique J



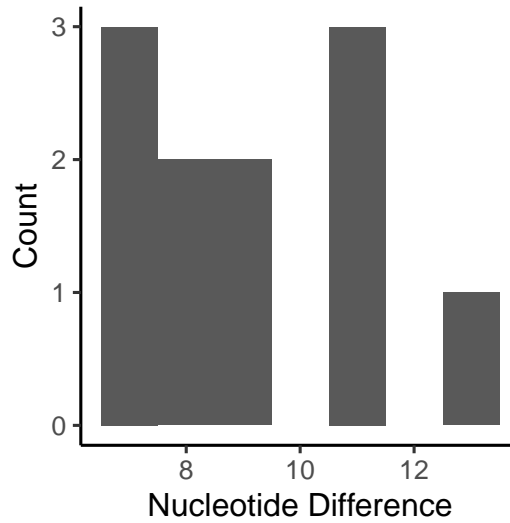
IGHV2–NL_2*01_S2193

1 sequences assigned
No exact matches.



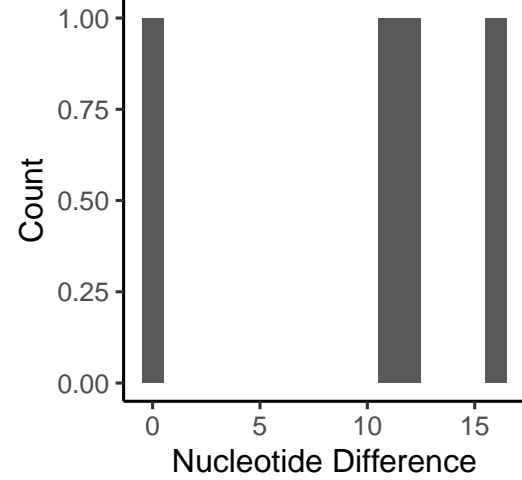
IGHV3–28*01_S5703

27 sequences assigned
No exact matches.



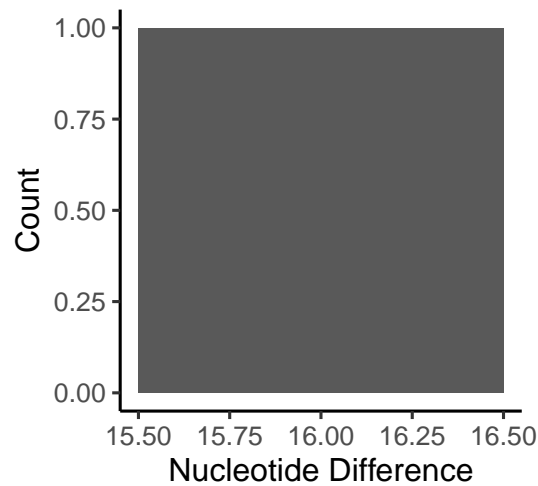
IGHV3–37*01_S9699

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



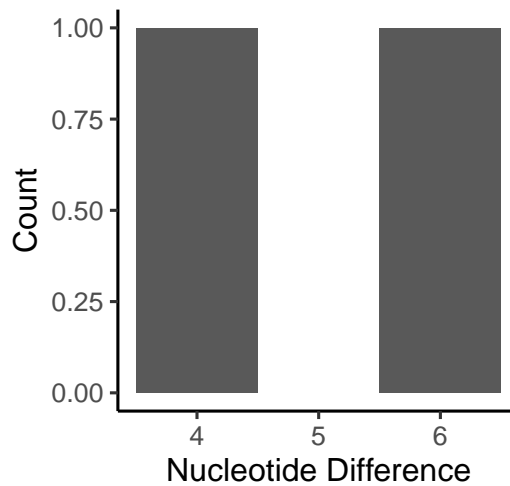
IGHV3–28*01_S0096

1 sequences assigned
No exact matches.



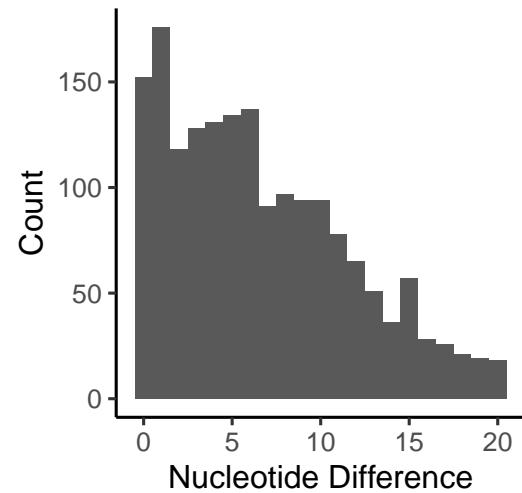
IGHV3–34*01_S1458

2 sequences assigned
No exact matches.



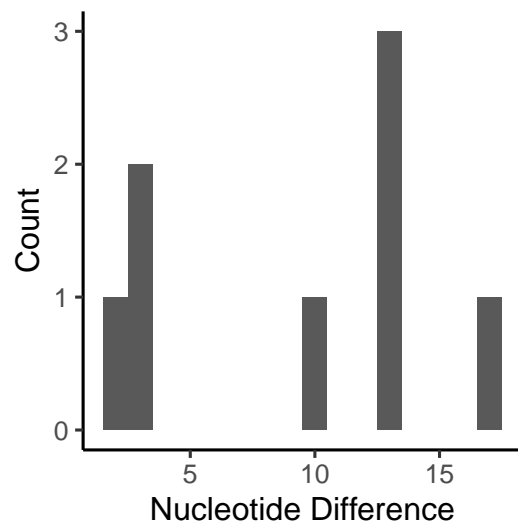
IGHV3–50*01_S9079

1866 sequences assigned
152 (8.1%) exact matches, in which:
102 unique CDR3
5 unique J



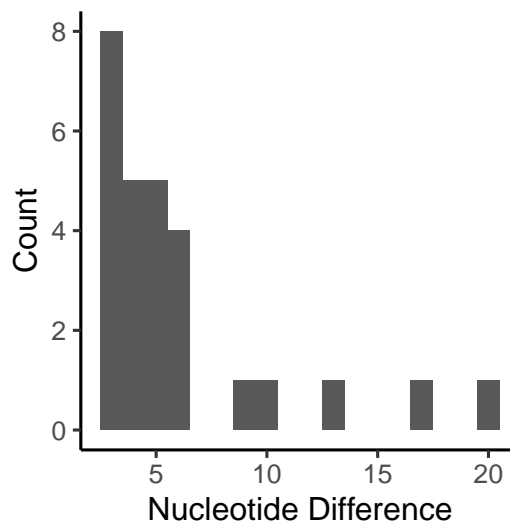
IGHV3–28*01_S3792

25 sequences assigned
No exact matches.



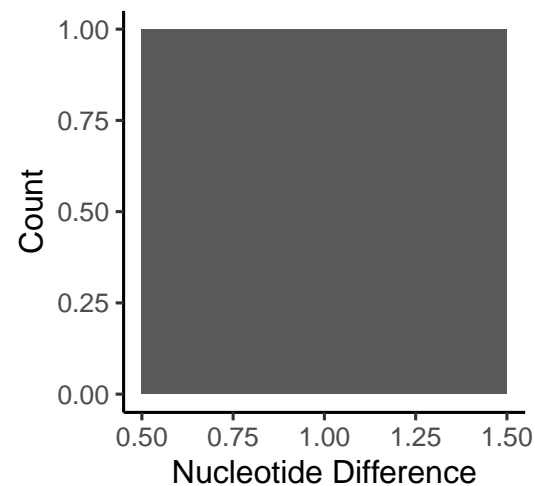
IGHV3–37*01_S6630

67 sequences assigned
No exact matches.



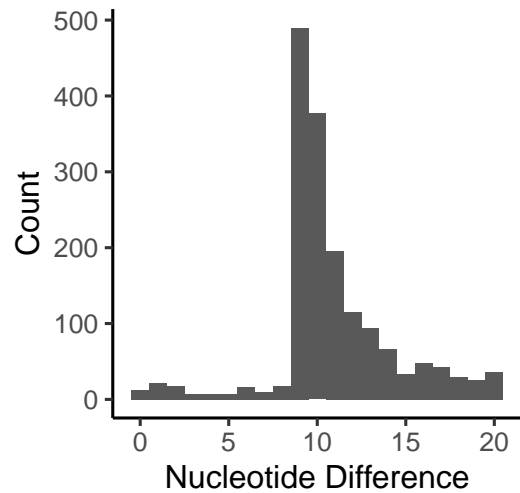
IGHV3–52*01_S3960

2 sequences assigned
No exact matches.



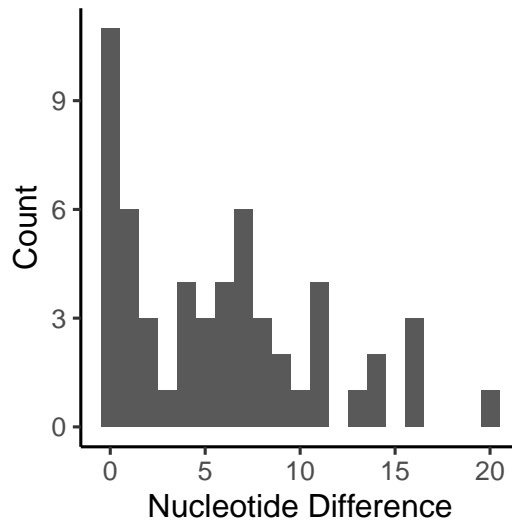
IGHV3-53*01_S0543

1835 sequences assigned
12 (0.7%) exact matches, in which:
7 unique CDR3
2 unique J



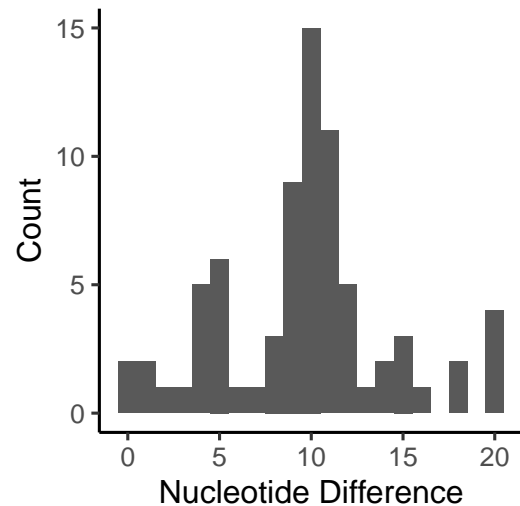
IGHV3-73*02_S8830

62 sequences assigned
11 (17.7%) exact matches, in which:
10 unique CDR3
3 unique J



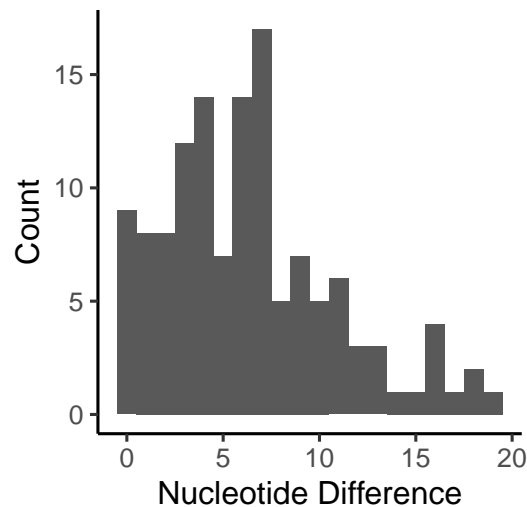
IGHV3-100*01_S4375

88 sequences assigned
2 (2.3%) exact matches, in which:
2 unique CDR3
2 unique J



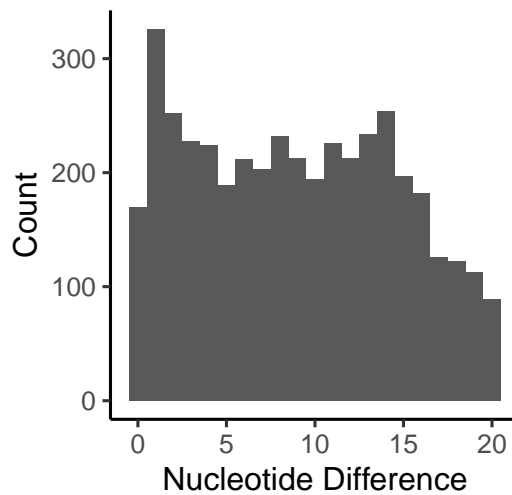
IGHV3-53*01_S2253

135 sequences assigned
9 (6.7%) exact matches, in which:
6 unique CDR3
2 unique J



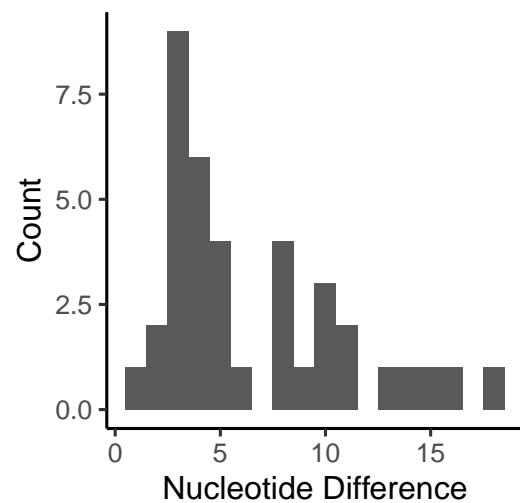
IGHV3-76*01_S4285

4737 sequences assigned
170 (3.6%) exact matches, in which:
119 unique CDR3
4 unique J



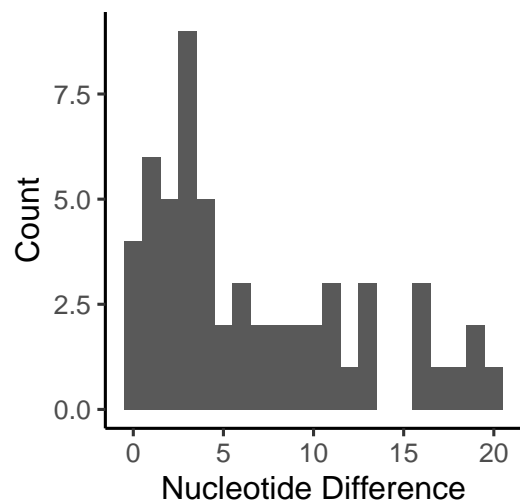
IGHV3-120*01_S4231

42 sequences assigned
No exact matches.



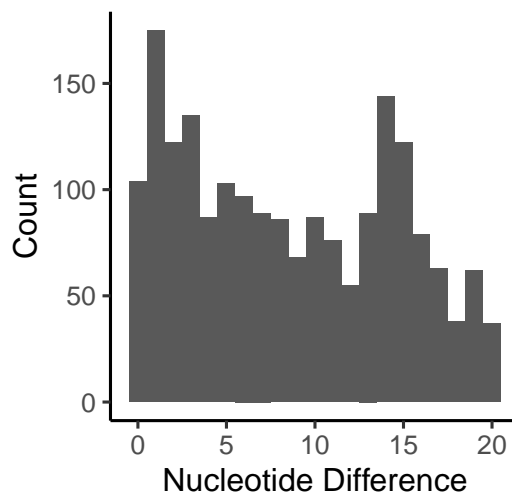
IGHV3-73*02_S3937

59 sequences assigned
4 (6.8%) exact matches, in which:
3 unique CDR3
1 unique J



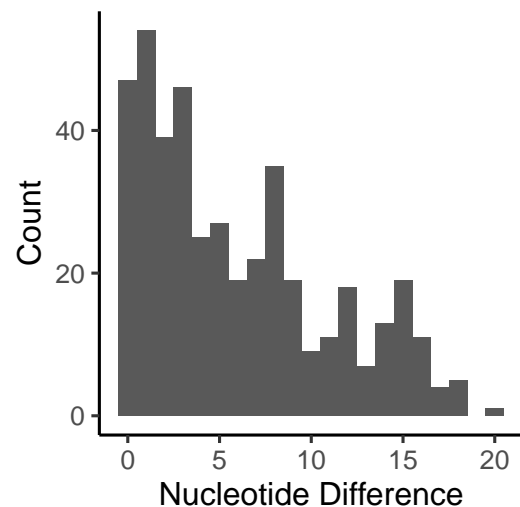
IGHV3-76*01_S5420

2196 sequences assigned
104 (4.7%) exact matches, in which:
69 unique CDR3
5 unique J



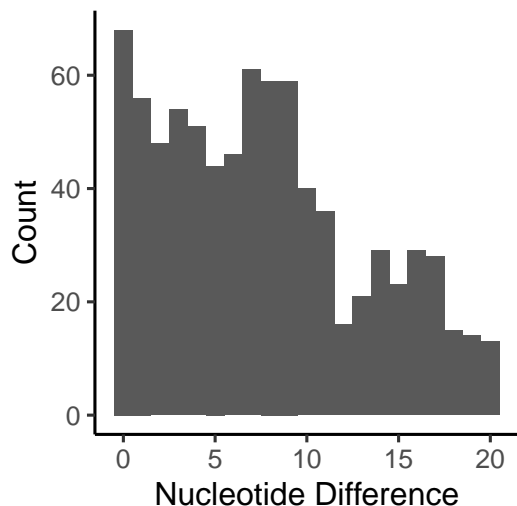
IGHV3-122*01_S5299

462 sequences assigned
47 (10.2%) exact matches, in which:
31 unique CDR3
5 unique J



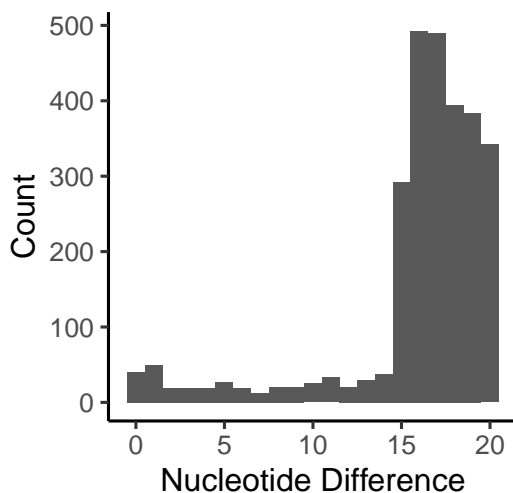
IGHV3-122*01_S8388

880 sequences assigned
68 (7.7%) exact matches, in which:
38 unique CDR3
4 unique J



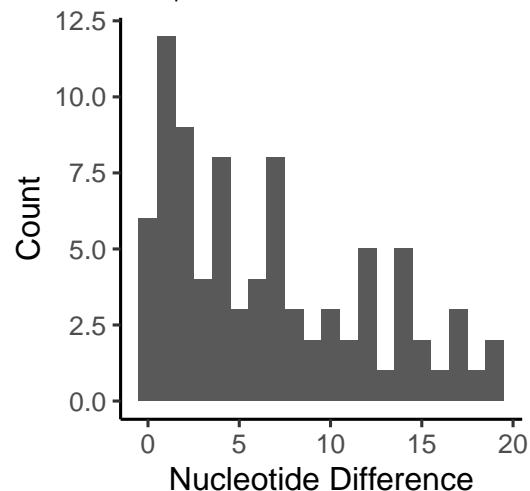
IGHV3-128*01_S1128

5634 sequences assigned
40 (0.7%) exact matches, in which:
28 unique CDR3
4 unique J



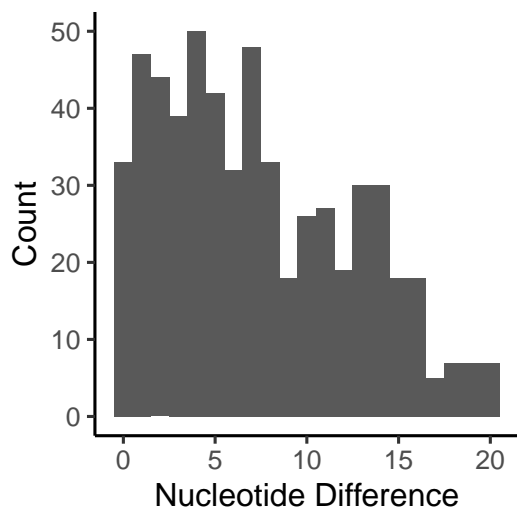
IGHV3-141*01_S8690

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



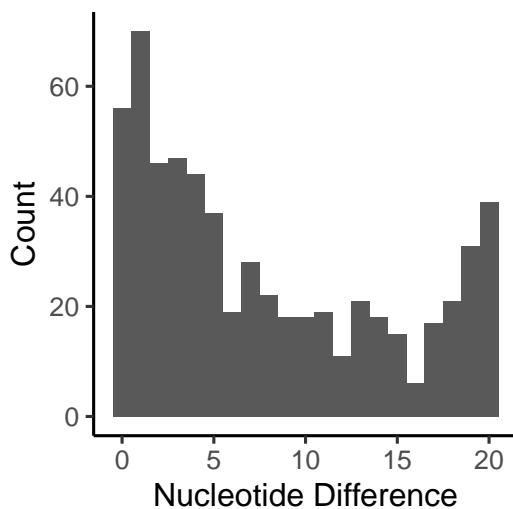
IGHV3-127*01_S5171

611 sequences assigned
33 (5.4%) exact matches, in which:
22 unique CDR3
4 unique J



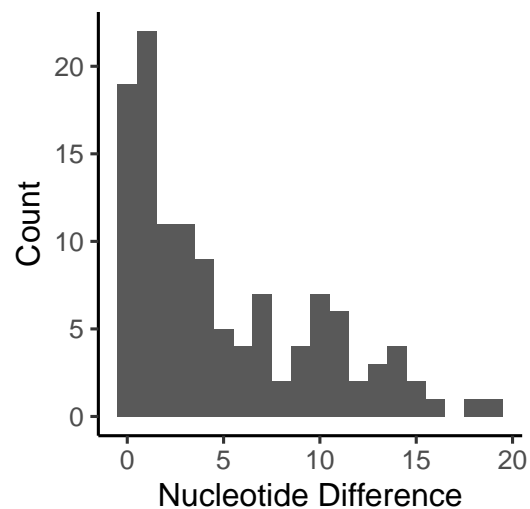
IGHV3-128*02_S1570

1142 sequences assigned
56 (4.9%) exact matches, in which:
35 unique CDR3
4 unique J



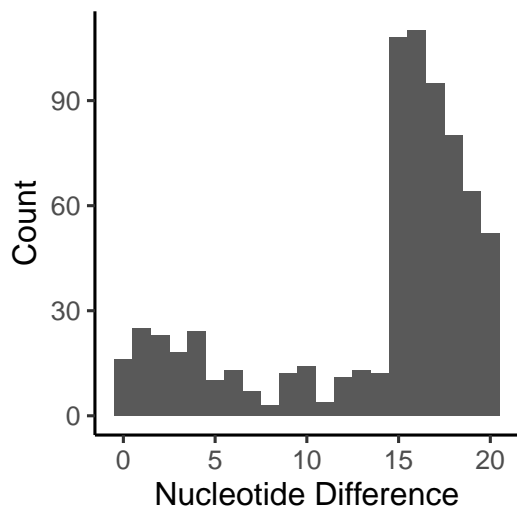
IGHV3-141*02_S4530

124 sequences assigned
19 (15.3%) exact matches, in which:
13 unique CDR3
3 unique J



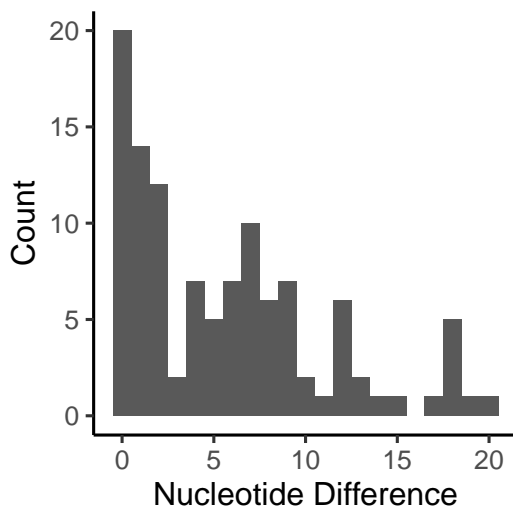
IGHV3-127*01_S6769

1048 sequences assigned
16 (1.5%) exact matches, in which:
8 unique CDR3
2 unique J



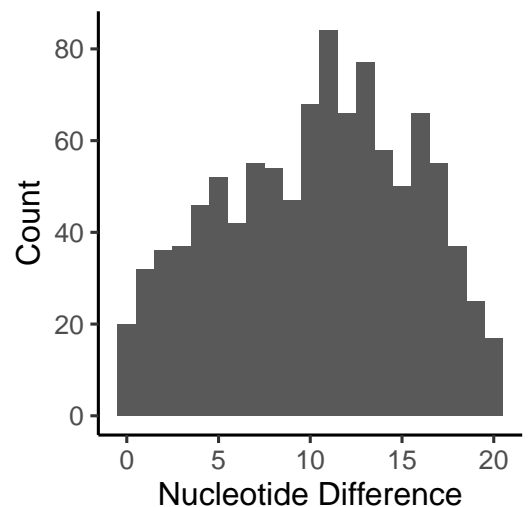
IGHV3-141*01_S5017

116 sequences assigned
20 (17.2%) exact matches, in which:
15 unique CDR3
4 unique J



IGHV3-152*01_S5891

1198 sequences assigned
20 (1.7%) exact matches, in which:
14 unique CDR3
3 unique J



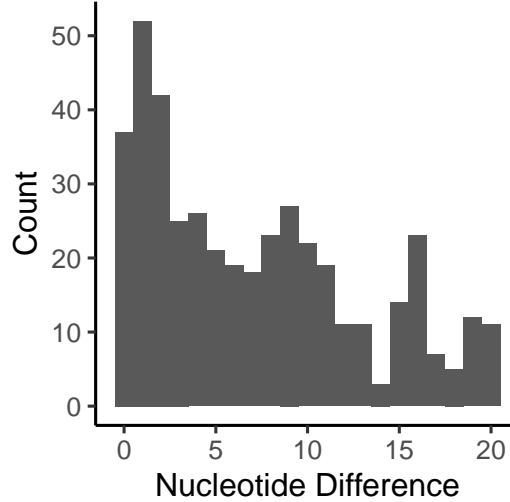
IGHV3-172*01_S8488

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



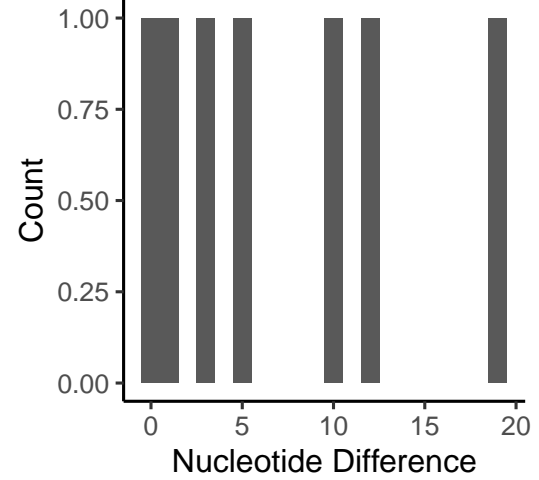
IGHV3-177*01_S8970

500 sequences assigned
37 (7.4%) exact matches, in which:
19 unique CDR3
3 unique J



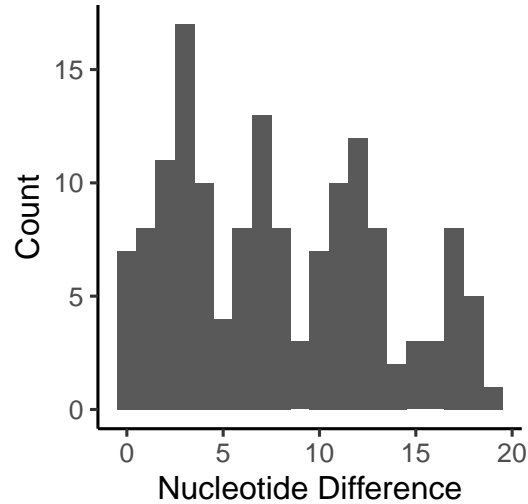
IGHV3-NL_10*02_S1970

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



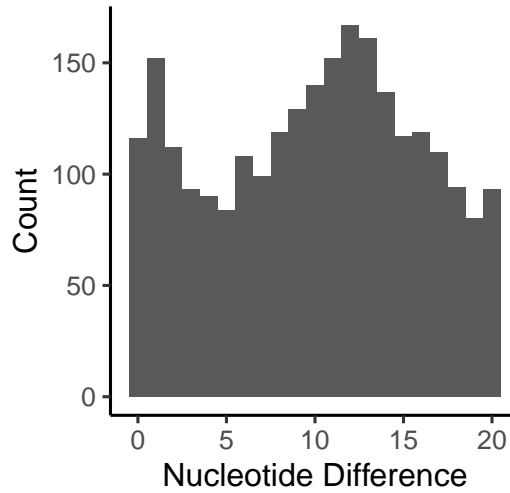
IGHV3-177*01_S1591

166 sequences assigned
7 (4.2%) exact matches, in which:
7 unique CDR3
2 unique J



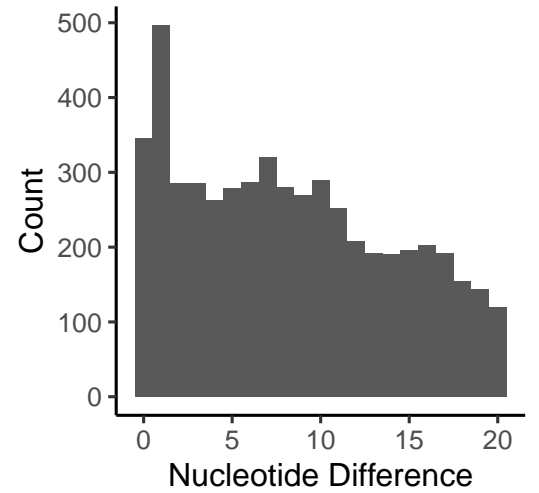
IGHV3-187*01_S1133

3264 sequences assigned
116 (3.6%) exact matches, in which:
87 unique CDR3
6 unique J



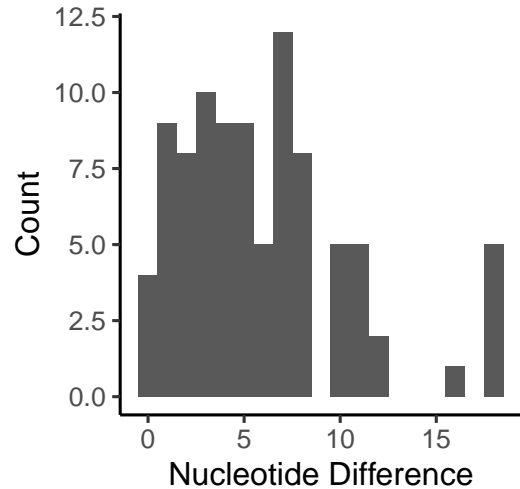
IGHV3-NL_11*01_S3736

6515 sequences assigned
345 (5.3%) exact matches, in which:
233 unique CDR3
6 unique J



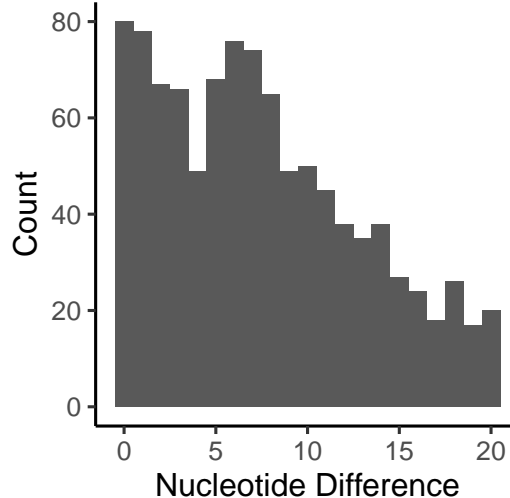
IGHV3-177*01_S8409

102 sequences assigned
4 (3.9%) exact matches, in which:
2 unique CDR3
1 unique J



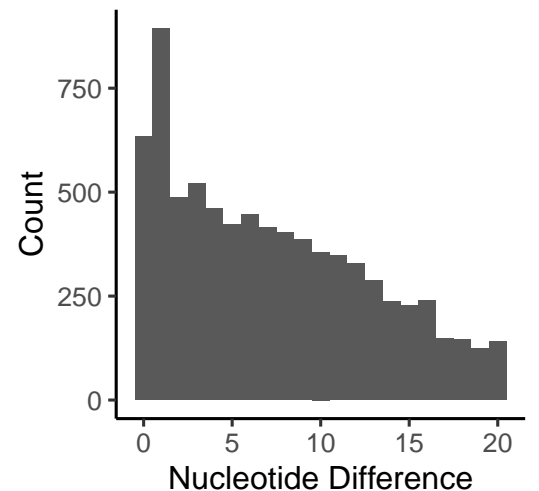
IGHV3-NL_1*01_S2031

1291 sequences assigned
80 (6.2%) exact matches, in which:
48 unique CDR3
5 unique J



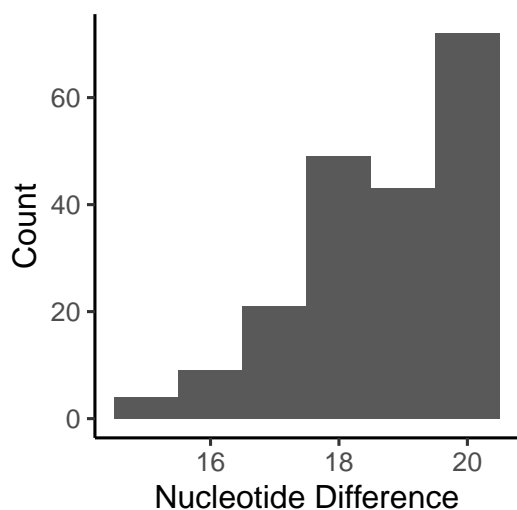
IGHV3-NL_11*01_S4619

8855 sequences assigned
634 (7.2%) exact matches, in which:
453 unique CDR3
6 unique J



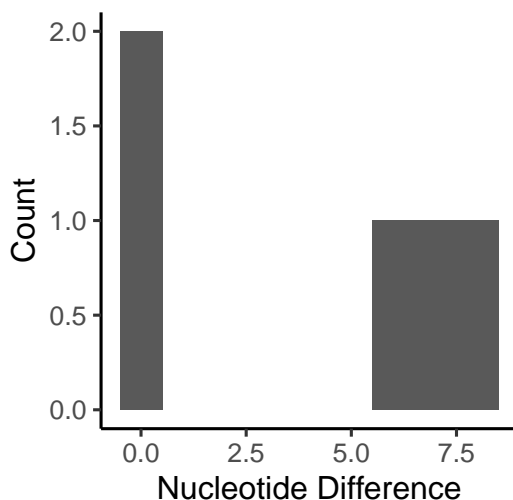
IGHV3-NL_12*02_S6994

1269 sequences assigned
No exact matches.



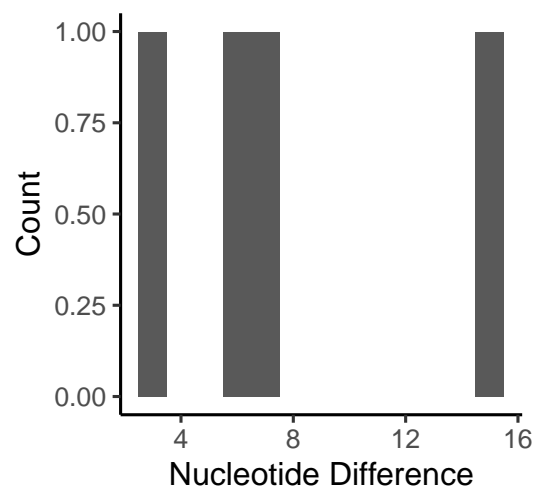
IGHV3-NL_14*01_S0218

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



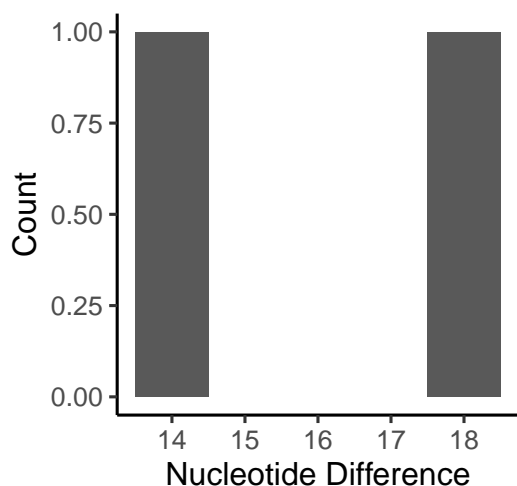
IGHV3-NL_15*01_S3018

4 sequences assigned
No exact matches.



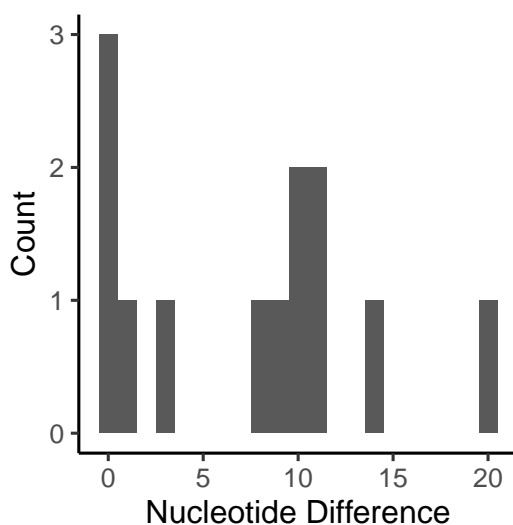
IGHV3-NL_13*01_S3940

2 sequences assigned
No exact matches.



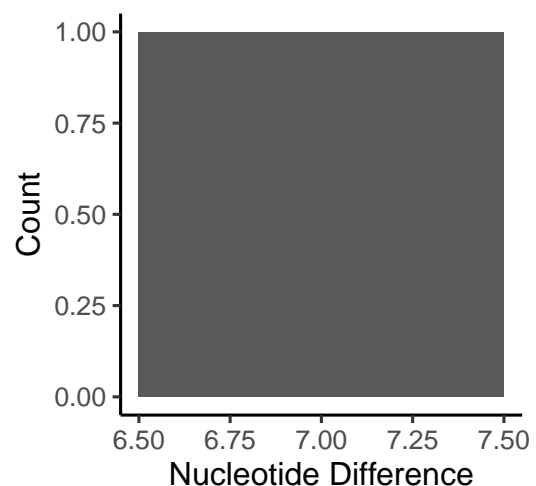
IGHV3-NL_14*01_S4949

13 sequences assigned
3 (23.1%) exact matches, in which:
3 unique CDR3
2 unique J



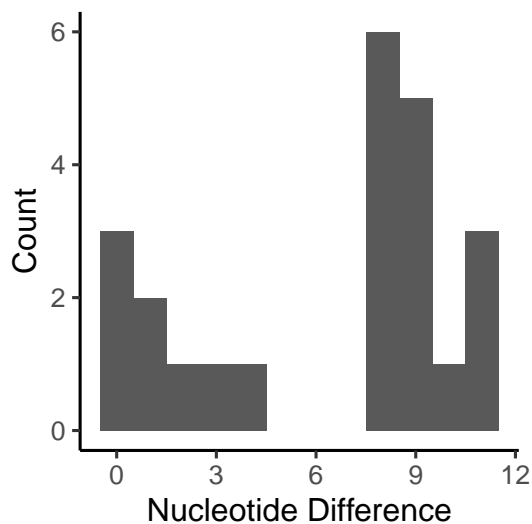
IGHV3-NL_15*01_S7302

1 sequences assigned
No exact matches.



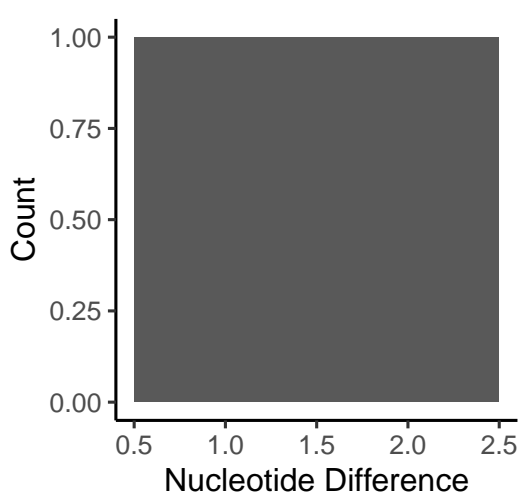
IGHV3-NL_13*01_S5767

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



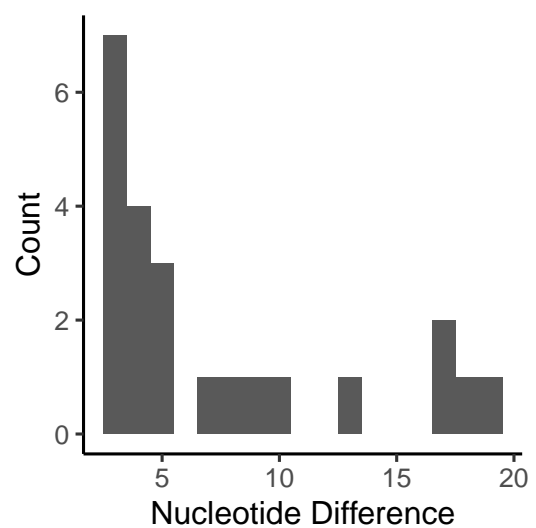
IGHV3-NL_14*01_S8830

5 sequences assigned
No exact matches.



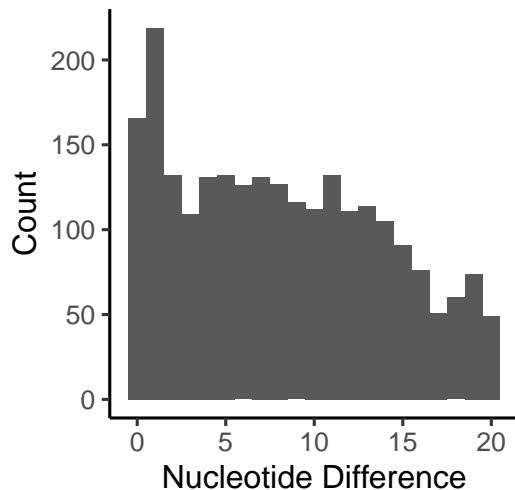
IGHV3-NL_16*01_S8234

26 sequences assigned
No exact matches.



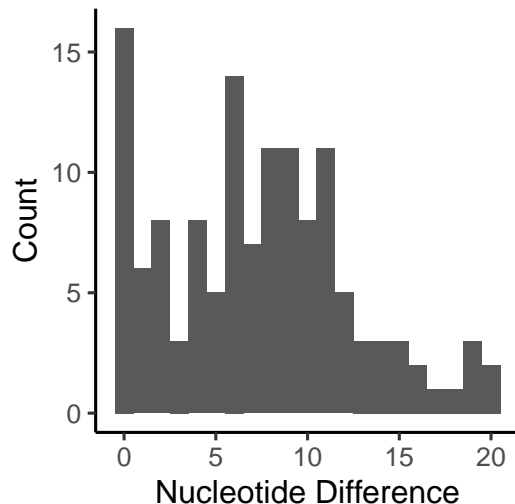
IGHV3–NL_17*01_S4250

2594 sequences assigned
166 (6.4%) exact matches, in which:
98 unique CDR3
4 unique J



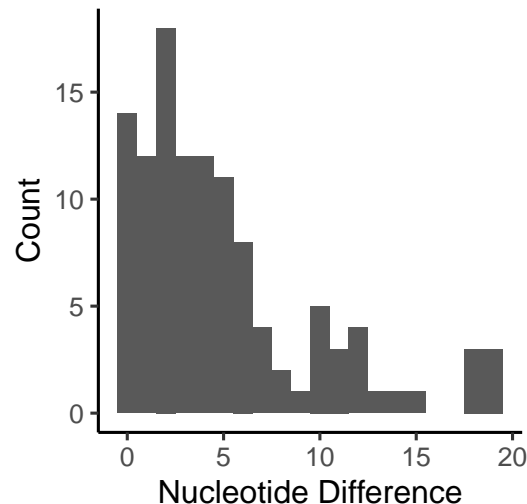
IGHV3–NL_18*01_S6383

139 sequences assigned
16 (11.5%) exact matches, in which:
12 unique CDR3
3 unique J



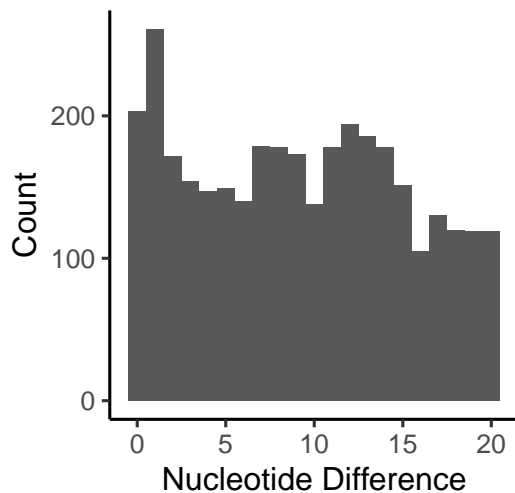
IGHV3–NL_2*01_S3900

126 sequences assigned
14 (11.1%) exact matches, in which:
9 unique CDR3
2 unique J



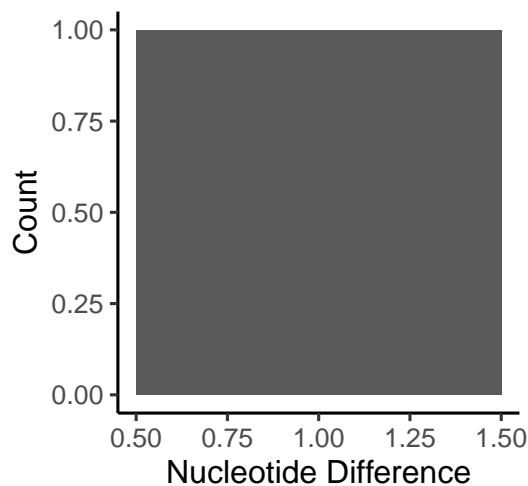
IGHV3–NL_17*01_S4736

3888 sequences assigned
203 (5.2%) exact matches, in which:
133 unique CDR3
4 unique J



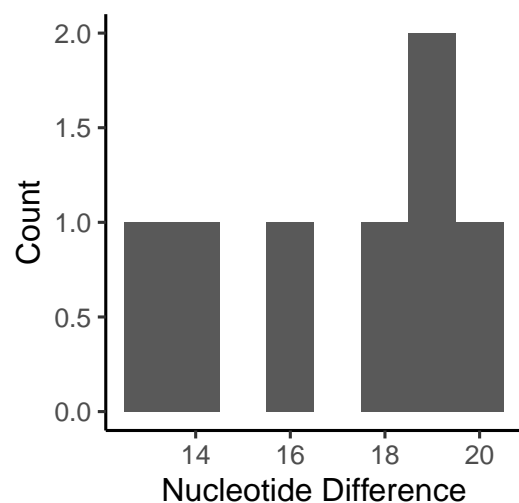
IGHV3–NL_19*01_S6894

1 sequences assigned
No exact matches.



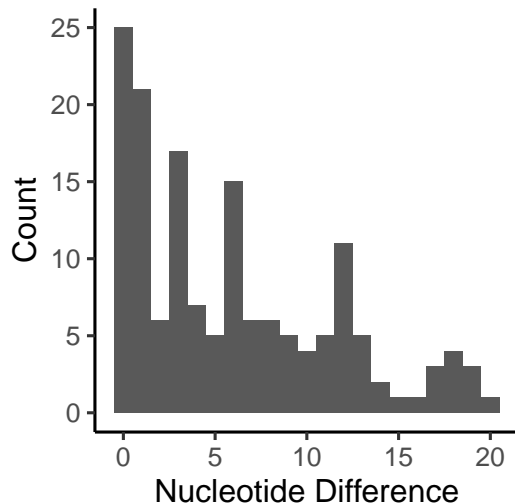
IGHV3–NL_4*01_S9067

18 sequences assigned
No exact matches.



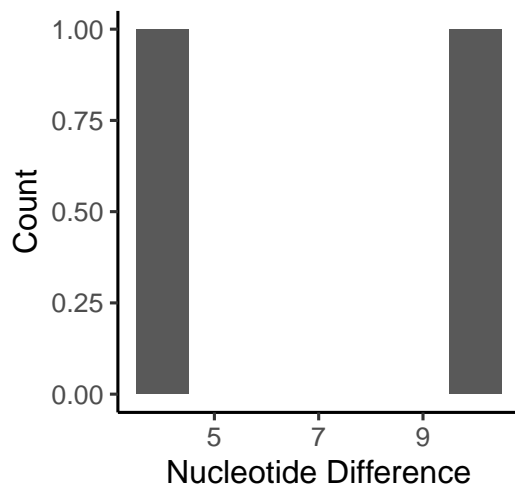
IGHV3–NL_18*01_S0984

165 sequences assigned
25 (15.2%) exact matches, in which:
18 unique CDR3
3 unique J



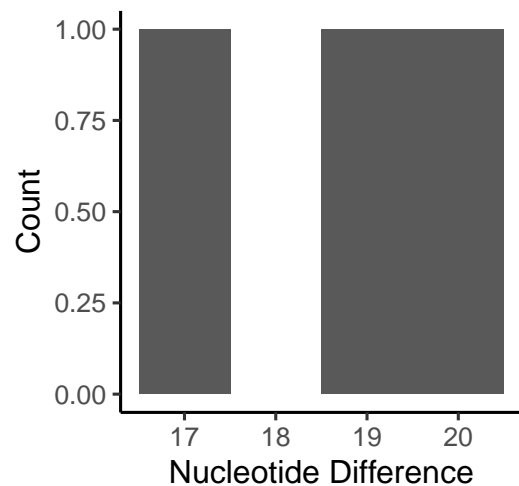
IGHV3–NL_19*01_S7515

2 sequences assigned
No exact matches.



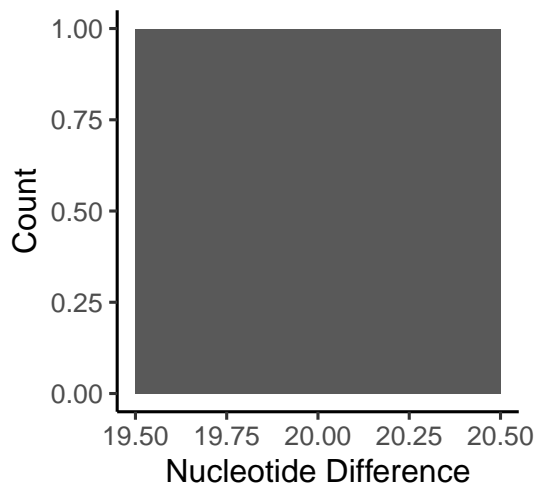
IGHV3–NL_4*01_S9635

11 sequences assigned
No exact matches.



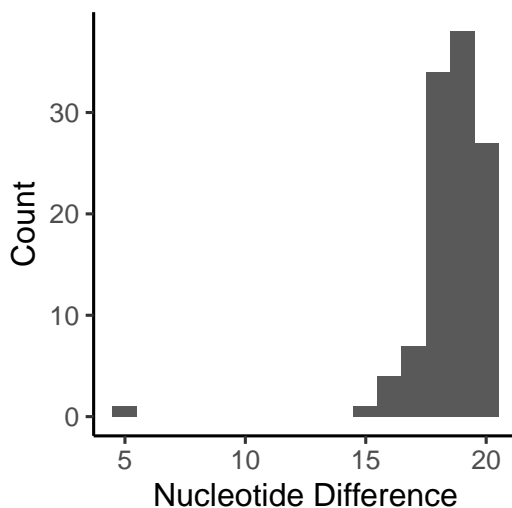
IGHV3-NL_5*01_S8361

14 sequences assigned
No exact matches.



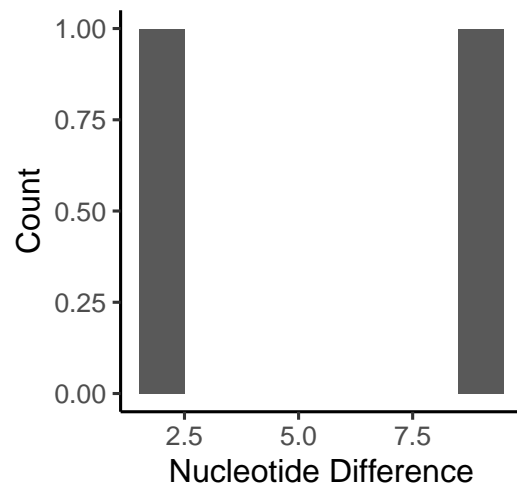
IGHV3-NL_8*01_S7474

336 sequences assigned
No exact matches.



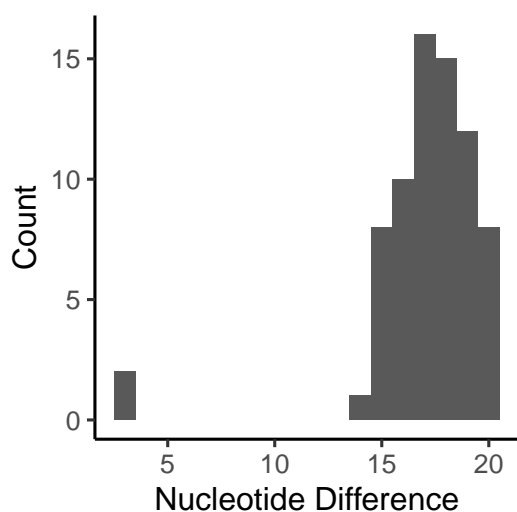
IGHV4-67*02_S8878

2 sequences assigned
No exact matches.



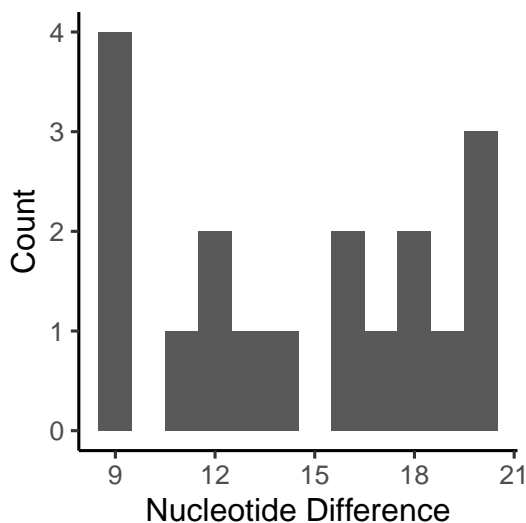
IGHV3-NL_6*02_S7808

127 sequences assigned
No exact matches.



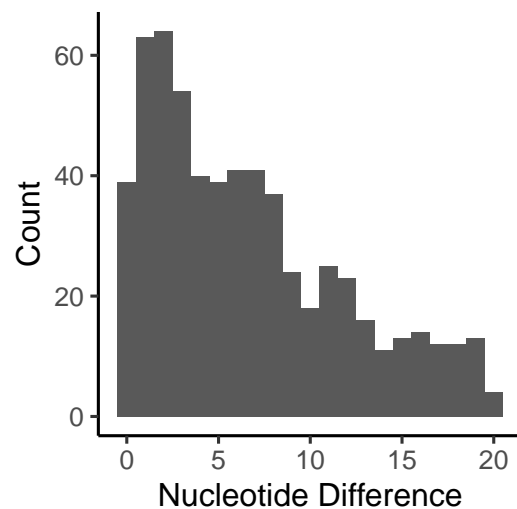
IGHV3-NL_9*01_S6098

25 sequences assigned
No exact matches.



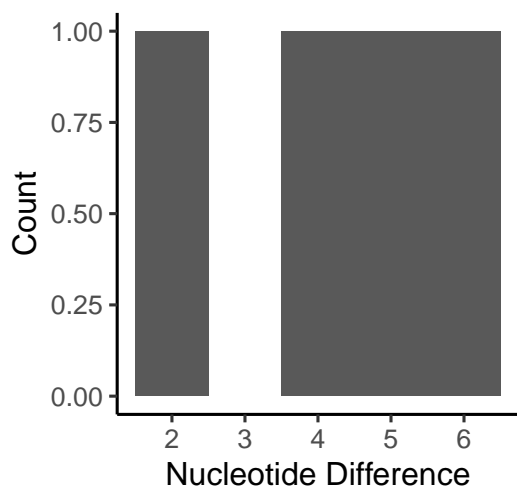
IGHV4-72*01_S8261

695 sequences assigned
39 (5.6%) exact matches, in which:
34 unique CDR3
5 unique J



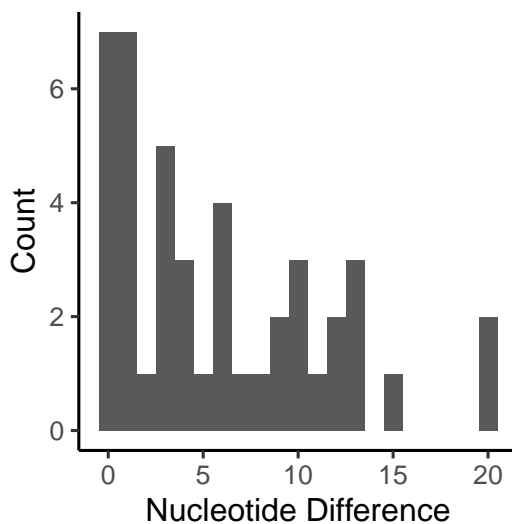
IGHV3-NL_7*01_S0199

5 sequences assigned
No exact matches.



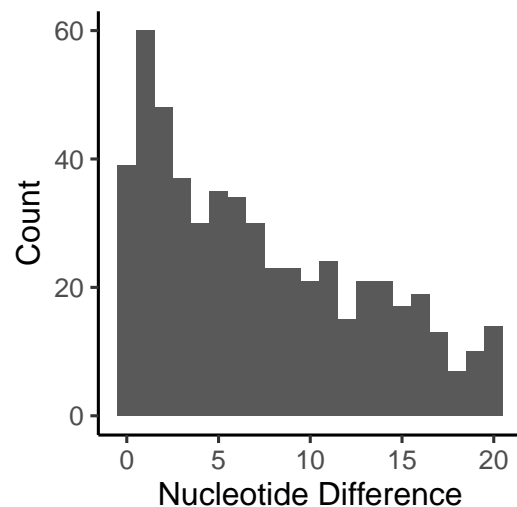
IGHV4-67*01_S6131

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



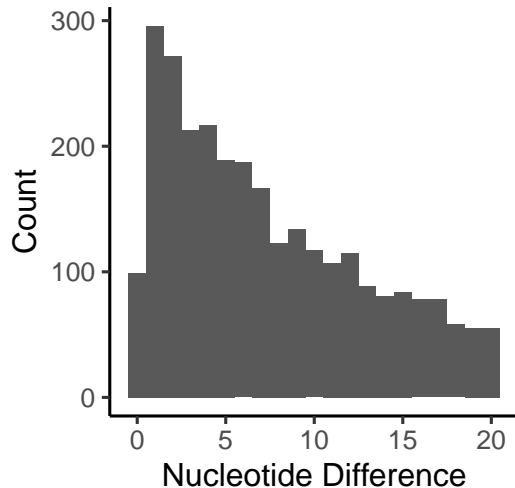
IGHV4-93*01_S8059

620 sequences assigned
39 (6.3%) exact matches, in which:
34 unique CDR3
5 unique J



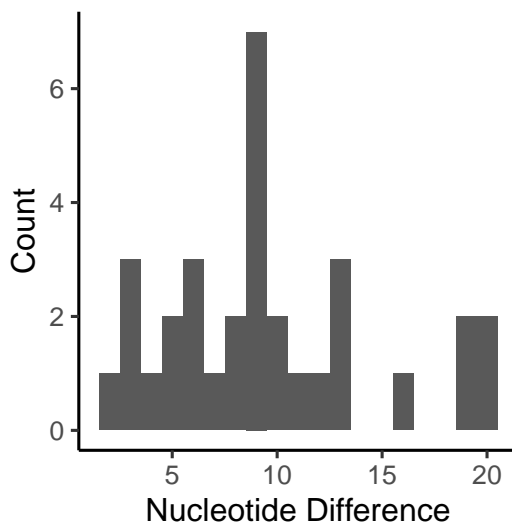
IGHV4-117*01_S0312

3218 sequences assigned
99 (3.1%) exact matches, in which:
86 unique CDR3
5 unique J



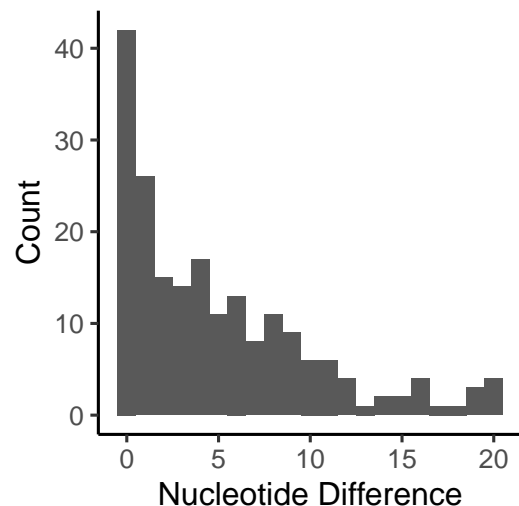
IGHV4-144*01_S2658

60 sequences assigned
No exact matches.



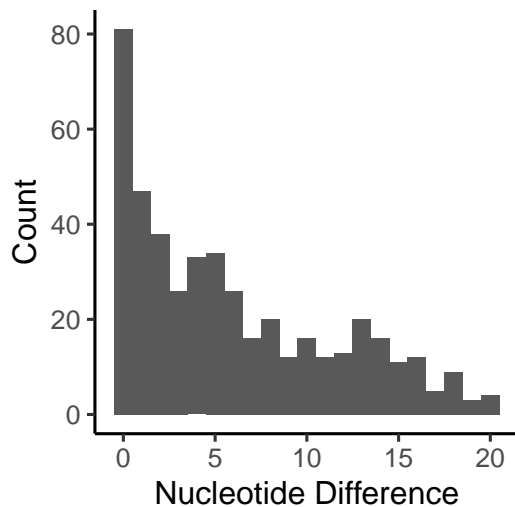
IGHV4-150*01_S0749

226 sequences assigned
42 (18.6%) exact matches, in which:
36 unique CDR3
6 unique J



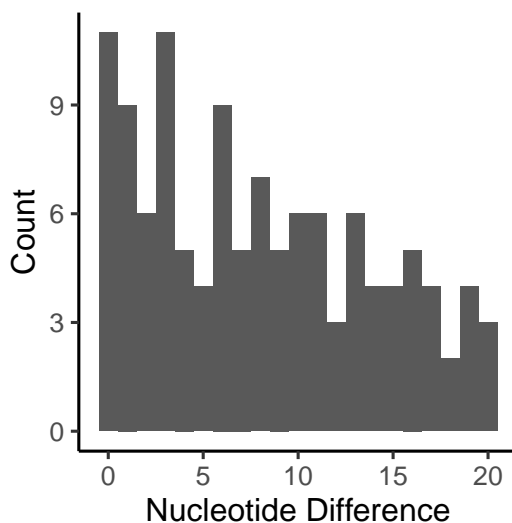
IGHV4-117*01_S0333

534 sequences assigned
81 (15.2%) exact matches, in which:
73 unique CDR3
5 unique J



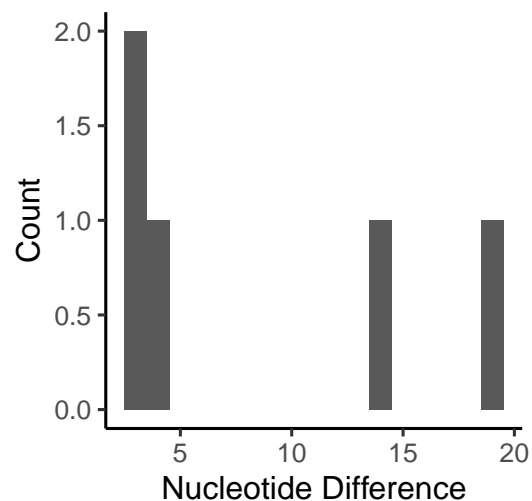
IGHV4-144*01_S3008

171 sequences assigned
11 (6.4%) exact matches, in which:
10 unique CDR3
3 unique J



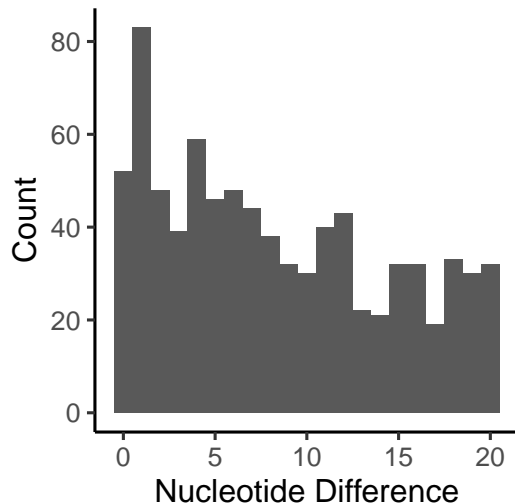
IGHV4-174*02_S5400

21 sequences assigned
No exact matches.



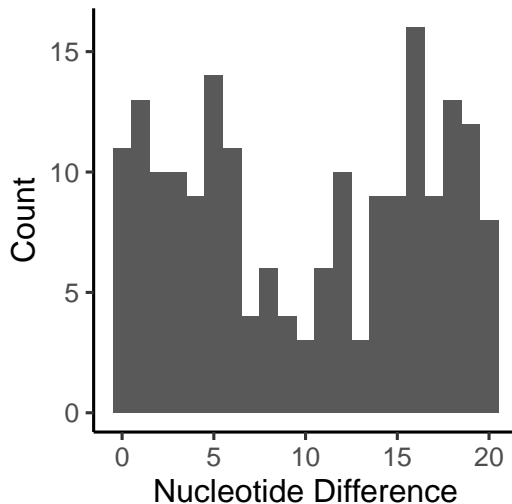
IGHV4-117*01_S3779

1050 sequences assigned
52 (5%) exact matches, in which:
47 unique CDR3
5 unique J



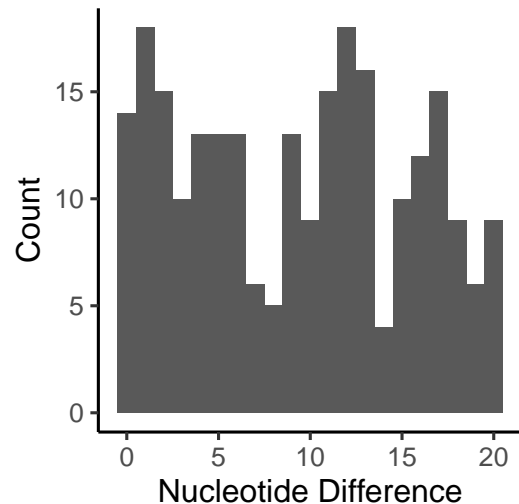
IGHV4-149*01_S8005

237 sequences assigned
11 (4.6%) exact matches, in which:
9 unique CDR3
2 unique J



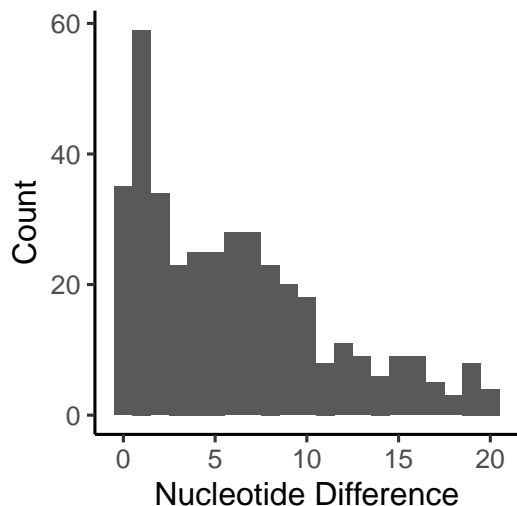
IGHV4-NL_1*01_S4155

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



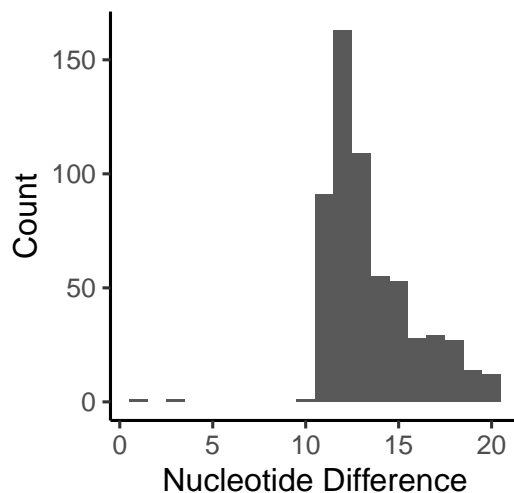
IGHV4–NL_1*01_S8621

406 sequences assigned
35 (8.6%) exact matches, in which:
33 unique CDR3
4 unique J



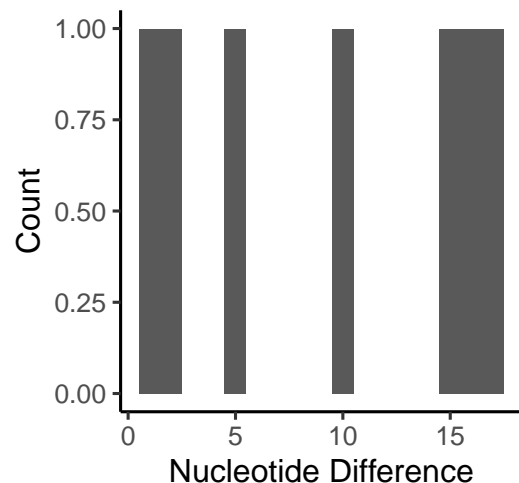
IGHV4–NL_12*01_S8068

665 sequences assigned
No exact matches.



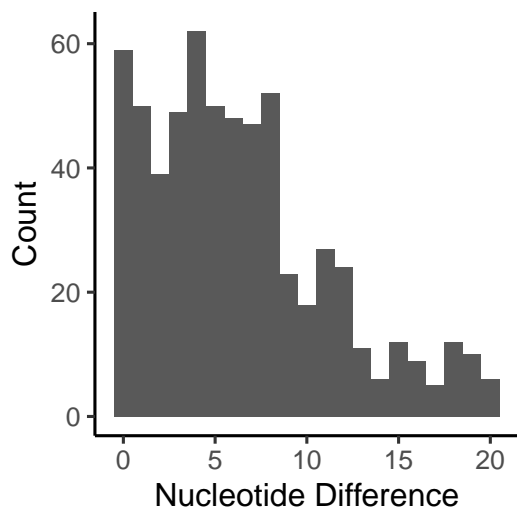
IGHV4–NL_16*01_S2138

10 sequences assigned
No exact matches.



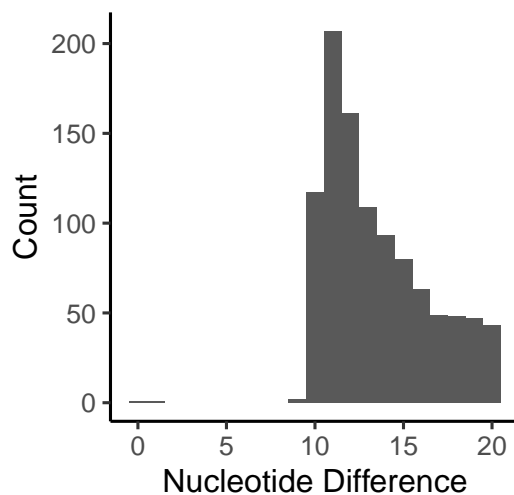
IGHV4–NL_1*01_S9508

674 sequences assigned
59 (8.8%) exact matches, in which:
50 unique CDR3
5 unique J



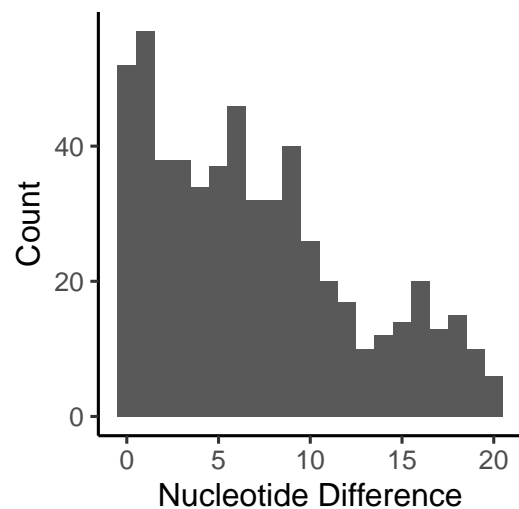
IGHV4–NL_13*01_S9744

1326 sequences assigned
1 (0.1%) exact matches, in which:
1 unique CDR3
1 unique J



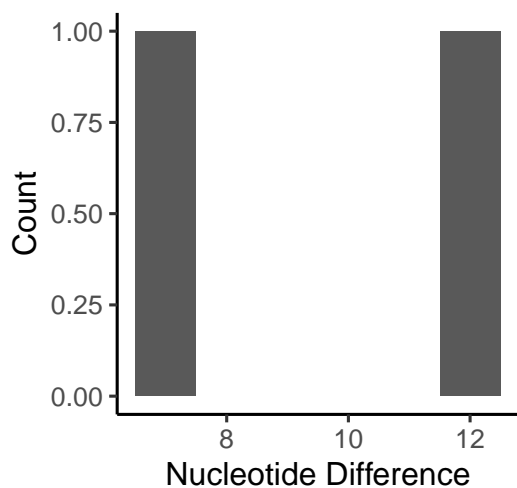
IGHV4–NL_17*01_S0936

692 sequences assigned
52 (7.5%) exact matches, in which:
44 unique CDR3
5 unique J



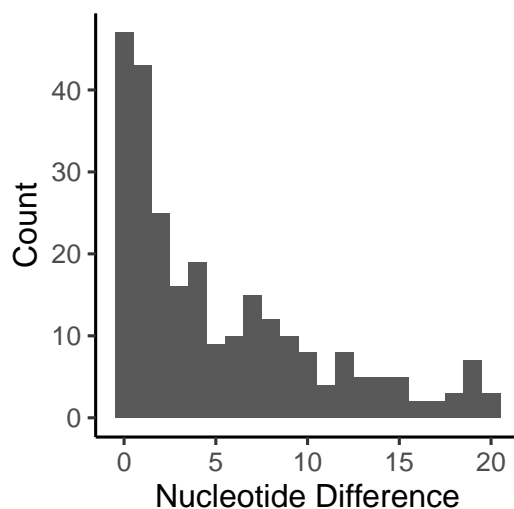
IGHV4–NL_10*02_S9348

3 sequences assigned
No exact matches.



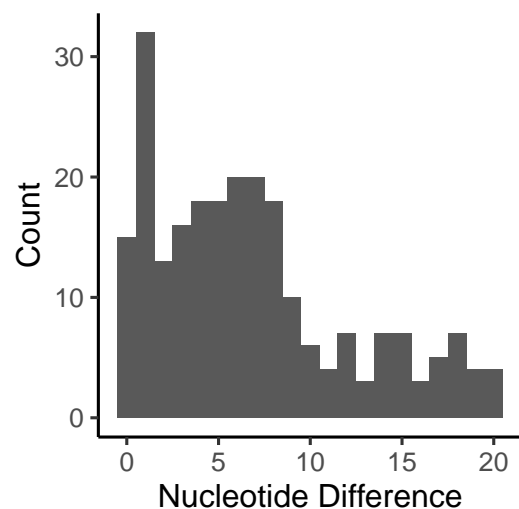
IGHV4–NL_15*01_S7687

273 sequences assigned
47 (17.2%) exact matches, in which:
42 unique CDR3
3 unique J



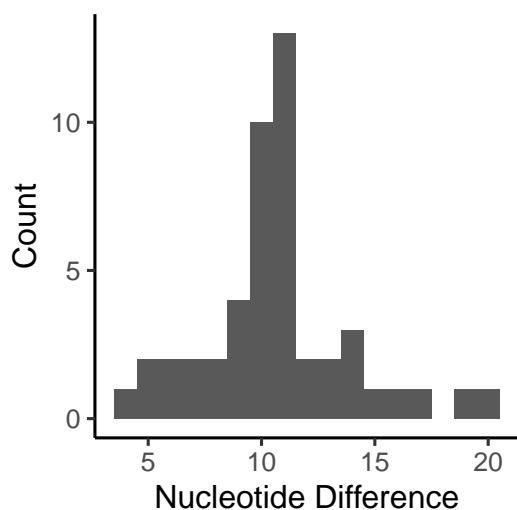
IGHV4–NL_17*01_S5431

270 sequences assigned
15 (5.6%) exact matches, in which:
14 unique CDR3
3 unique J



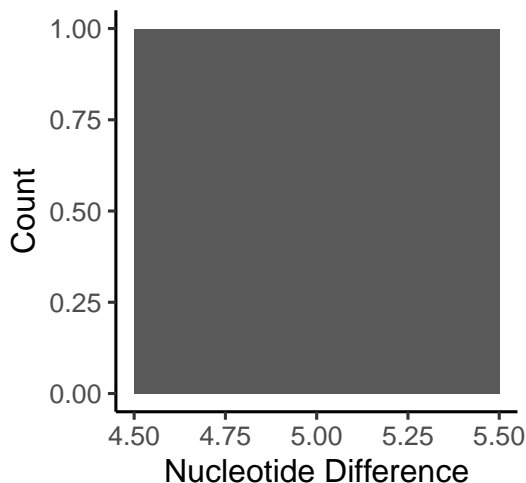
IGHV4–NL_19*01_S1944

53 sequences assigned
No exact matches.



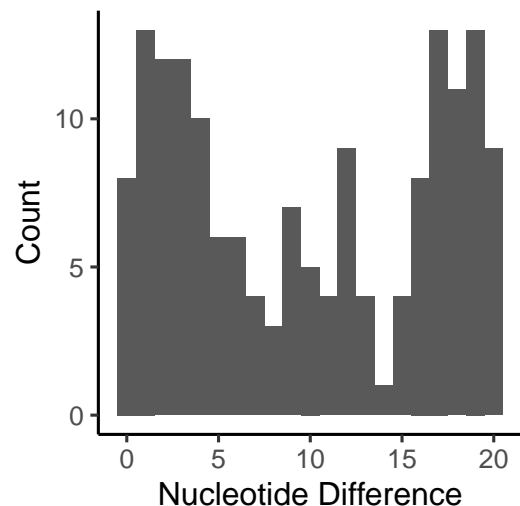
IGHV4–NL_20*01_S6885

1 sequences assigned
No exact matches.



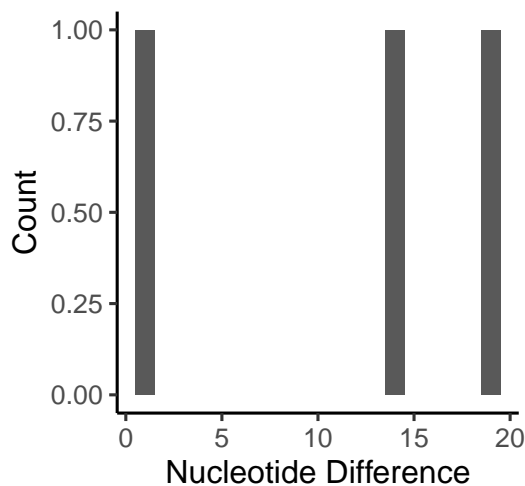
IGHV4–NL_21*01_S6308

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



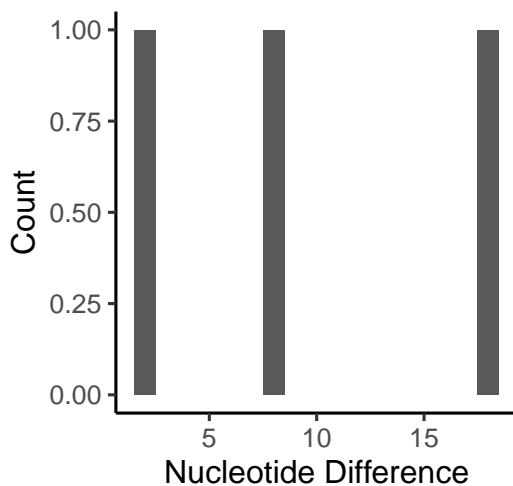
IGHV4–NL_20*01_S3868

4 sequences assigned
No exact matches.



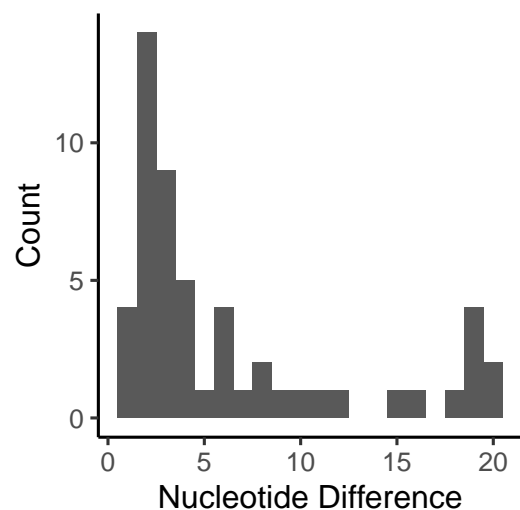
IGHV4–NL_20*01_S7244

13 sequences assigned
No exact matches.



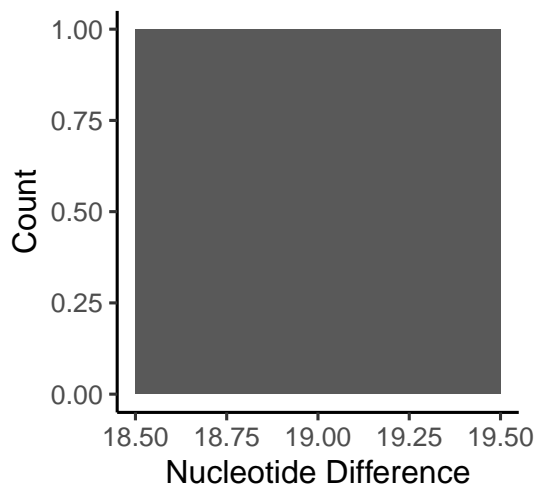
IGHV4–NL_22*01_S2393

63 sequences assigned
No exact matches.



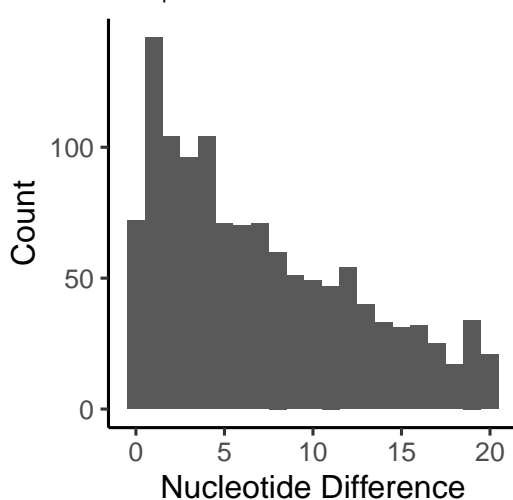
IGHV4–NL_20*01_S5229

1 sequences assigned
No exact matches.



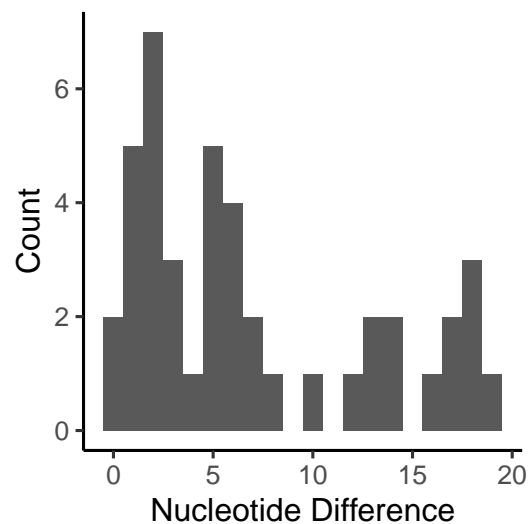
IGHV4–NL_21*01_S0138

1463 sequences assigned
72 (4.9%) exact matches, in which:
67 unique CDR3
5 unique J



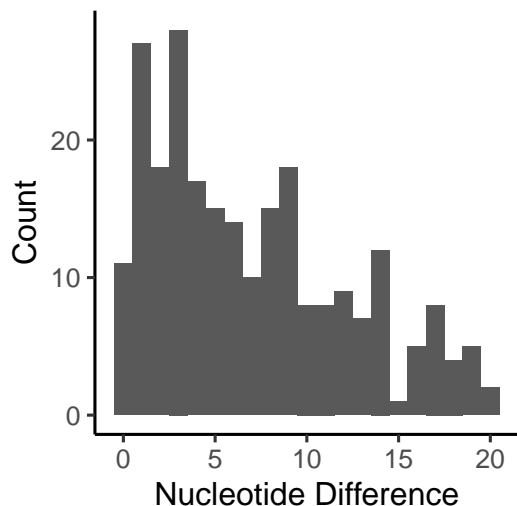
IGHV4–NL_22*01_S5234

52 sequences assigned
2 (3.8%) exact matches, in which:
2 unique CDR3
1 unique J



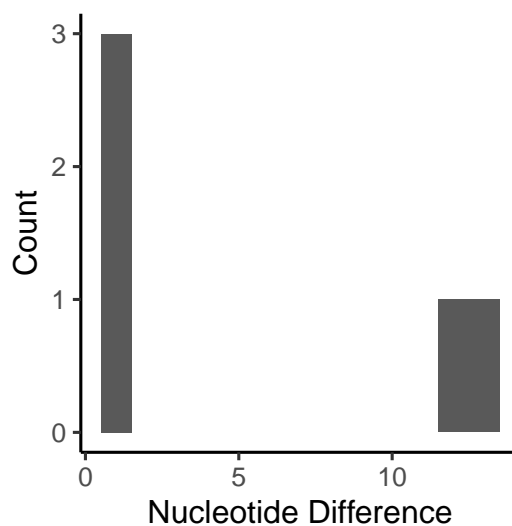
IGHV4–NL_22*01_S6977

268 sequences assigned
11 (4.1%) exact matches, in which:
9 unique CDR3
3 unique J



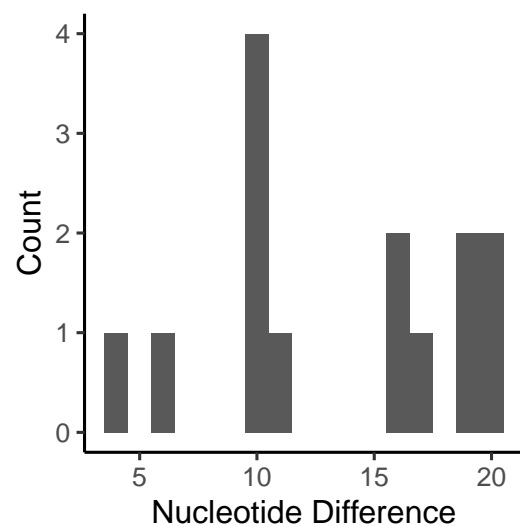
IGHV4–NL_25*01_S6960

5 sequences assigned
No exact matches.



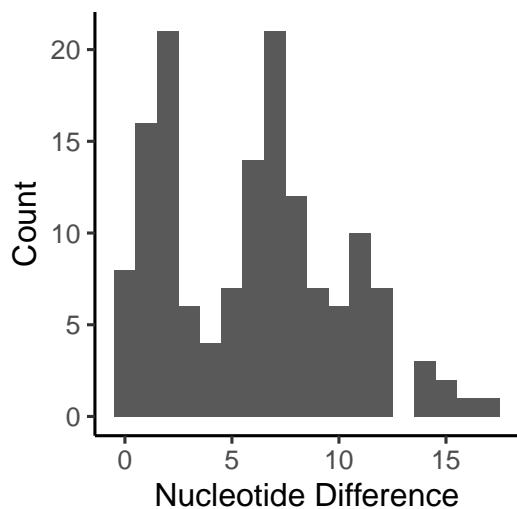
IGHV4–NL_27*01_S1458

143 sequences assigned
No exact matches.



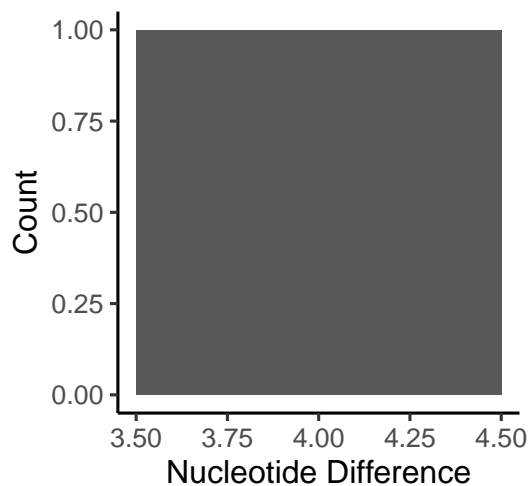
IGHV4–NL_24*01_S7595

153 sequences assigned
8 (5.2%) exact matches, in which:
6 unique CDR3
3 unique J



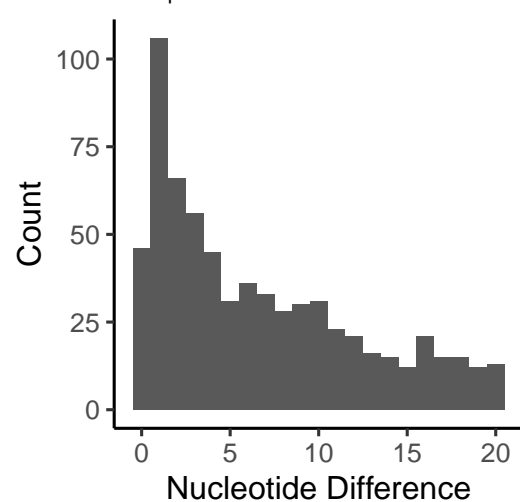
IGHV4–NL_25*01_S8385

2 sequences assigned
No exact matches.



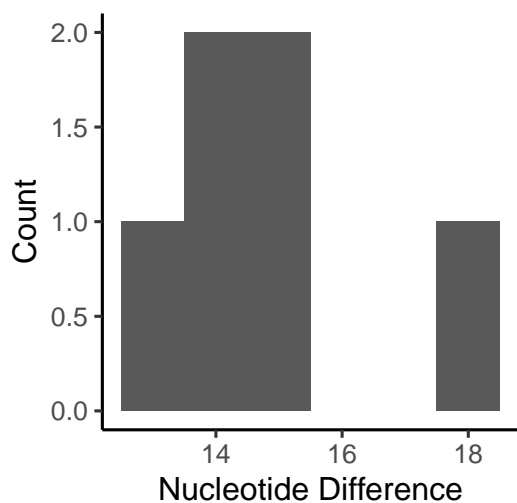
IGHV4–NL_27*01_S7150

762 sequences assigned
46 (6%) exact matches, in which:
44 unique CDR3
5 unique J



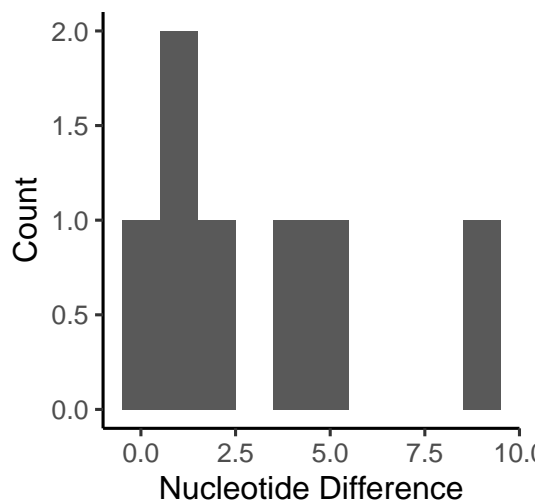
IGHV4–NL_25*01_S6200

8 sequences assigned
No exact matches.



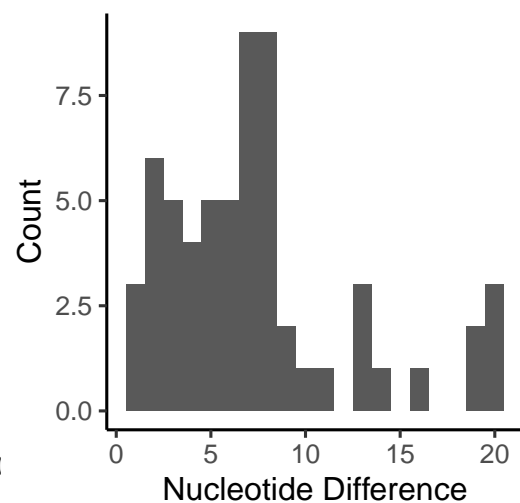
IGHV4–NL_25*01_S9478

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



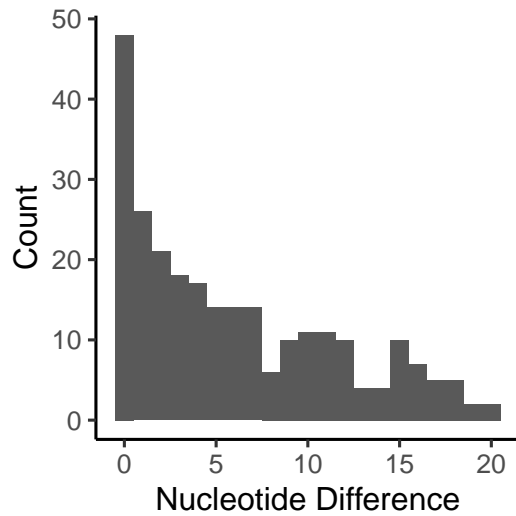
IGHV4–NL_28*01_S8057

88 sequences assigned
No exact matches.



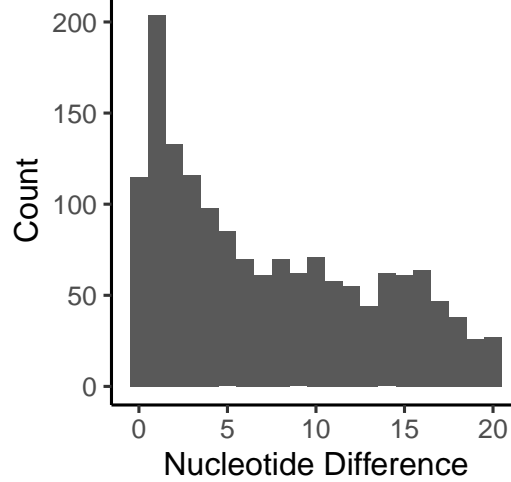
IGHV4–NL_29*01_S3761

275 sequences assigned
48 (17.5%) exact matches, in which:
42 unique CDR3
5 unique J



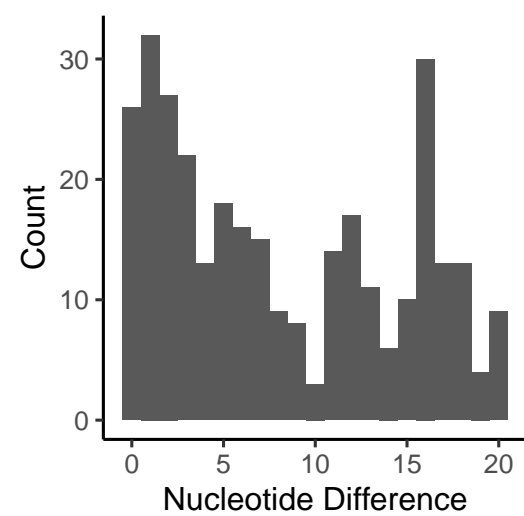
IGHV4–NL_33*01_S4467

2105 sequences assigned
115 (5.5%) exact matches, in which:
95 unique CDR3
5 unique J



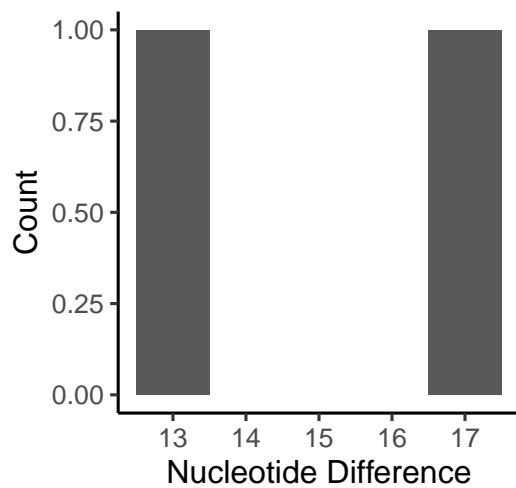
IGHV4–NL_36*01_S5847

348 sequences assigned
26 (7.5%) exact matches, in which:
23 unique CDR3
4 unique J



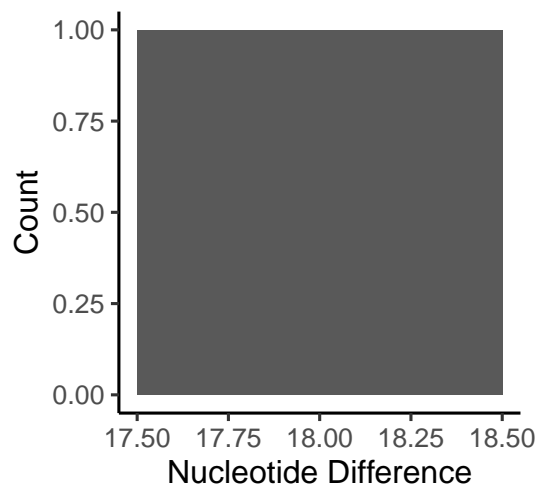
IGHV4–NL_3*01_S7576

4 sequences assigned
No exact matches.



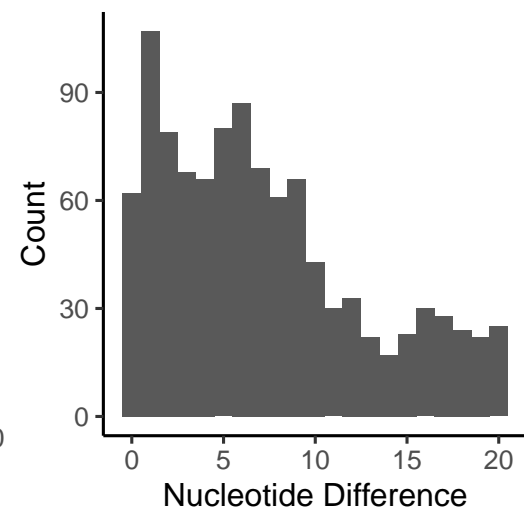
IGHV4–NL_34*01_S4745

1 sequences assigned
No exact matches.



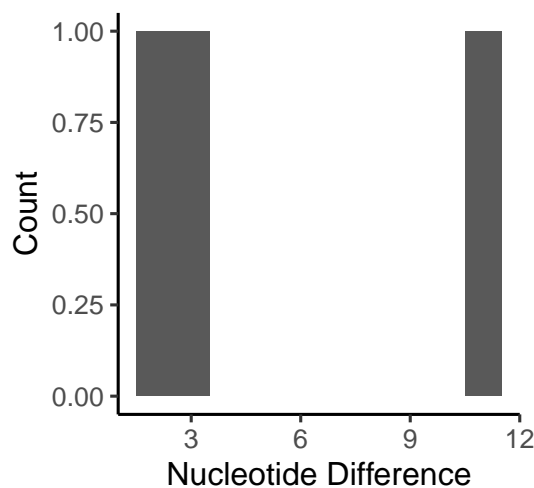
IGHV4–NL_38*01_S2187

1234 sequences assigned
62 (5%) exact matches, in which:
52 unique CDR3
5 unique J



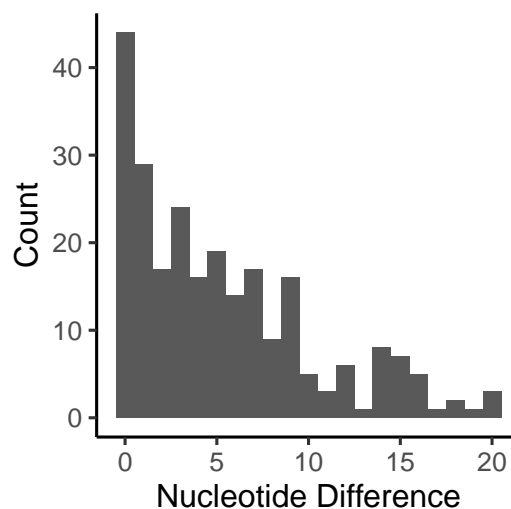
IGHV4–NL_31*01_S7693

3 sequences assigned
No exact matches.



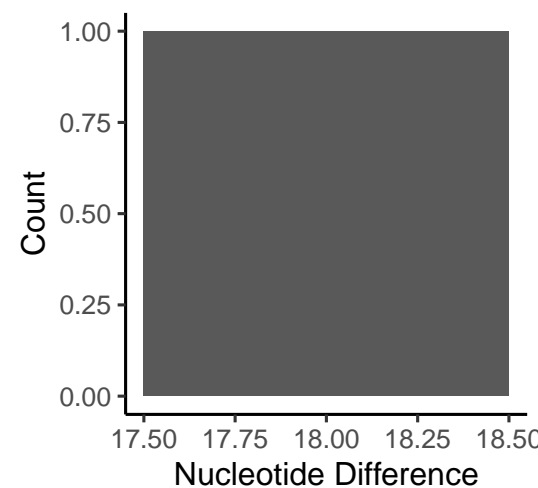
IGHV4–NL_36*01_S5000

280 sequences assigned
44 (15.7%) exact matches, in which:
43 unique CDR3
5 unique J



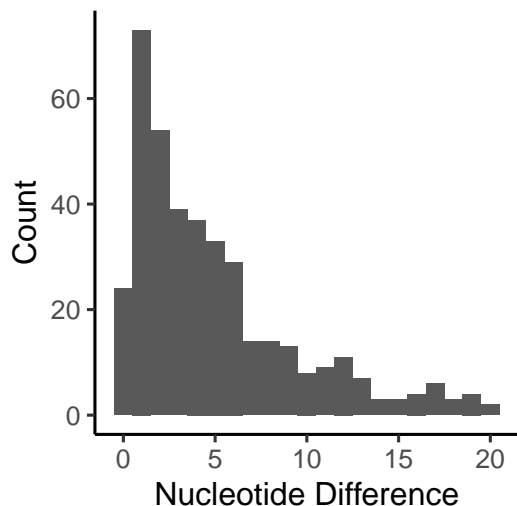
IGHV4–NL_4*01_S8866

11 sequences assigned
No exact matches.



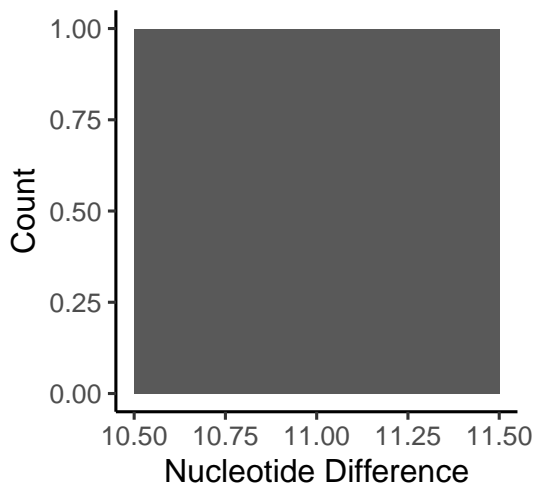
IGHV4–NL_40*01_S9974

401 sequences assigned
24 (6%) exact matches, in which:
24 unique CDR3
4 unique J



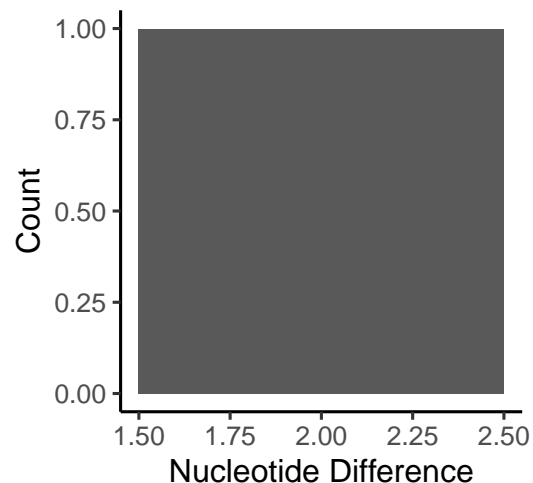
IGHV4–NL_6*01_S1133

1 sequences assigned
No exact matches.



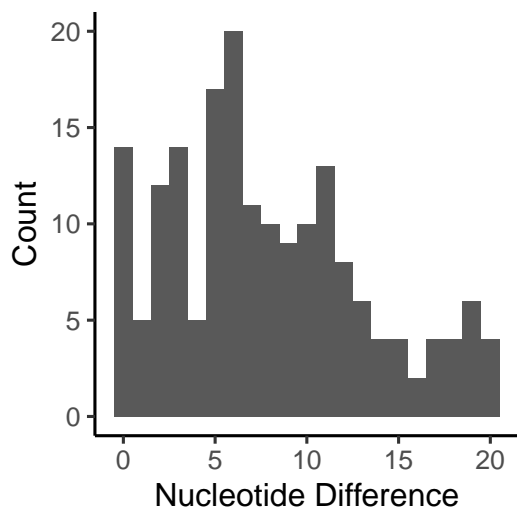
IGHV4–NL_8*02_S1304

1 sequences assigned
No exact matches.



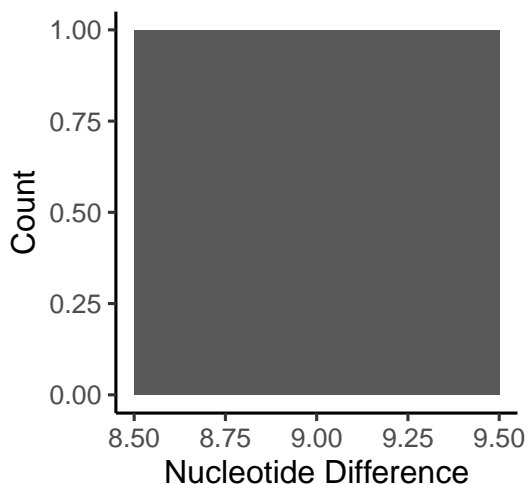
IGHV4–NL_5*01_S7147

206 sequences assigned
14 (6.8%) exact matches, in which:
14 unique CDR3
4 unique J



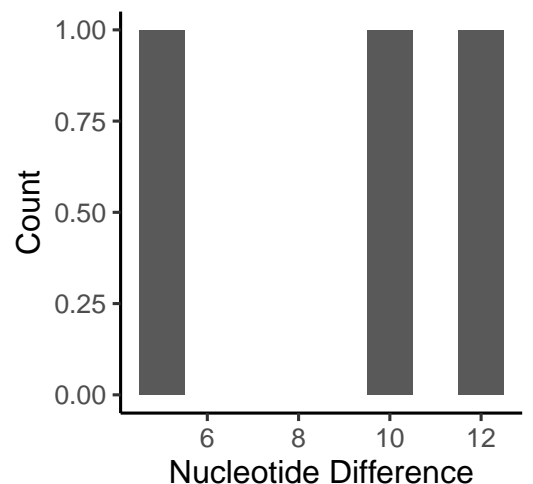
IGHV4–NL_6*01_S4760

1 sequences assigned
No exact matches.



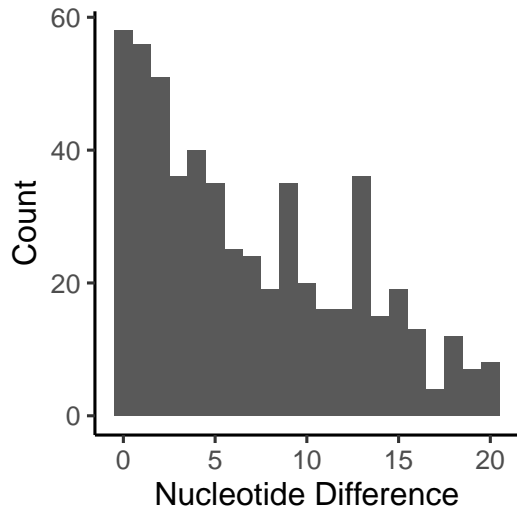
IGHV4–NL_9*01_S4906

16 sequences assigned
No exact matches.



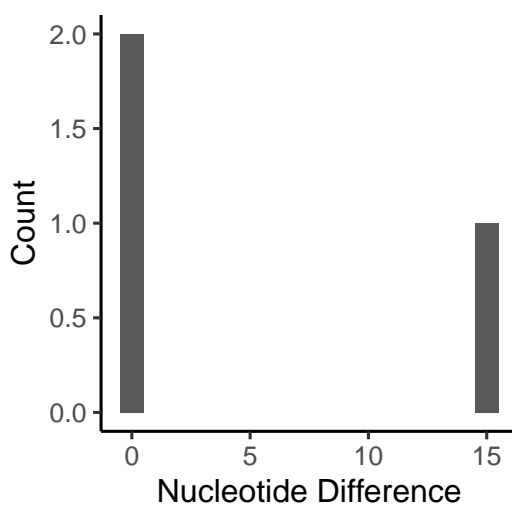
IGHV4–NL_5*01_S8645

597 sequences assigned
58 (9.7%) exact matches, in which:
49 unique CDR3
4 unique J



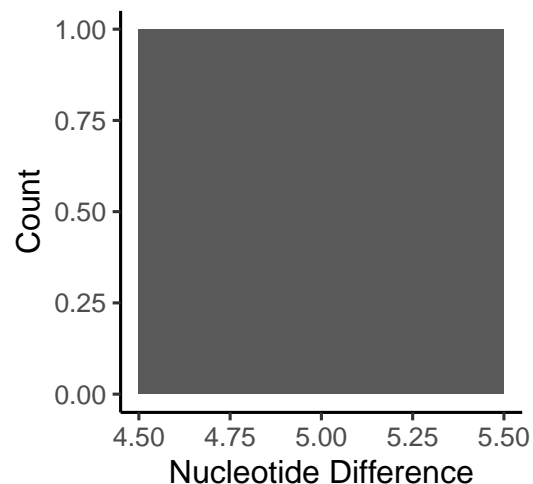
IGHV4–NL_6*01_S5805

3 sequences assigned
2 (66.7%) exact matches, in which:
2 unique CDR3
2 unique J



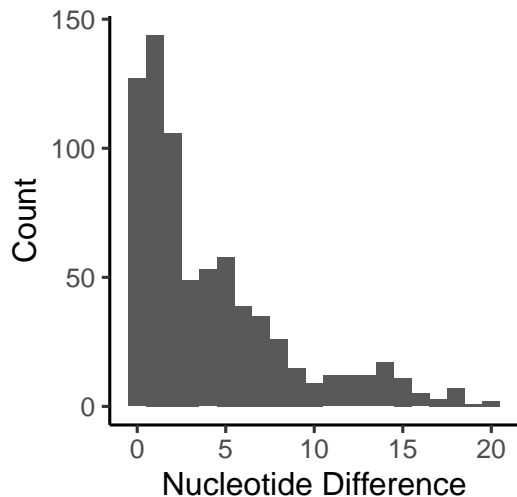
IGHV4–NL_9*01_S9889

1 sequences assigned
No exact matches.



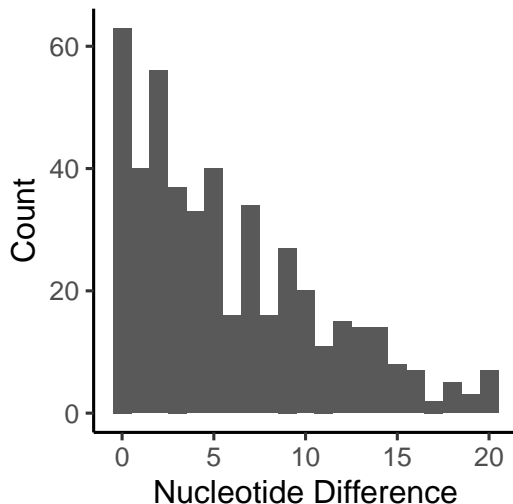
IGHV5-15*01_S0308

751 sequences assigned
127 (16.9%) exact matches, in which:
68 unique CDR3
5 unique J



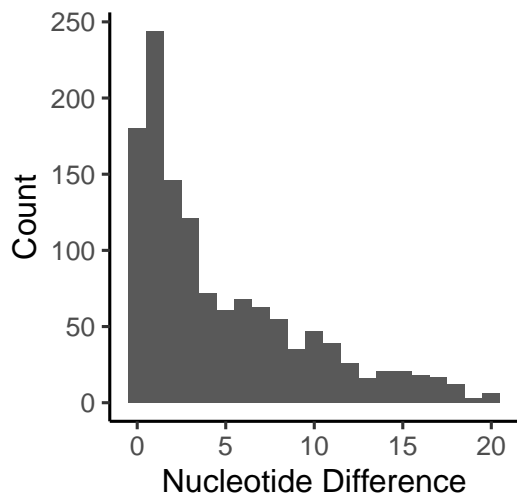
IGHV7-86*01_S0200

487 sequences assigned
63 (12.9%) exact matches, in which:
35 unique CDR3
4 unique J



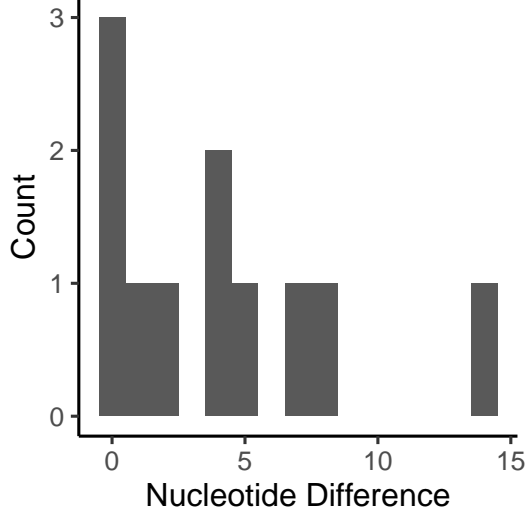
IGHV5-15*01_S4790

1312 sequences assigned
180 (13.7%) exact matches, in which:
101 unique CDR3
5 unique J



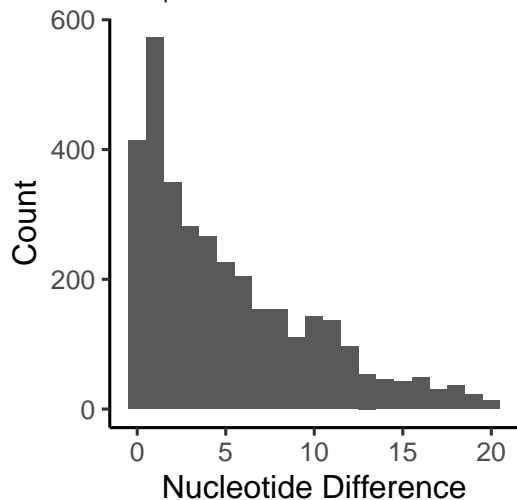
IGHV7-135*01_S4281

11 sequences assigned
3 (27.3%) exact matches, in which:
1 unique CDR3
1 unique J



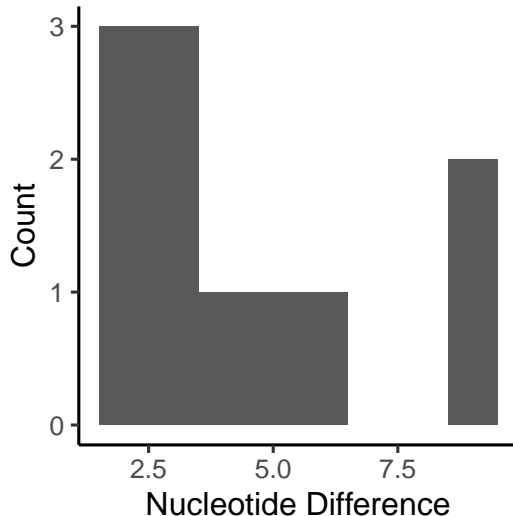
IGHV5-157*02_S8705

3560 sequences assigned
414 (11.6%) exact matches, in which:
254 unique CDR3
5 unique J

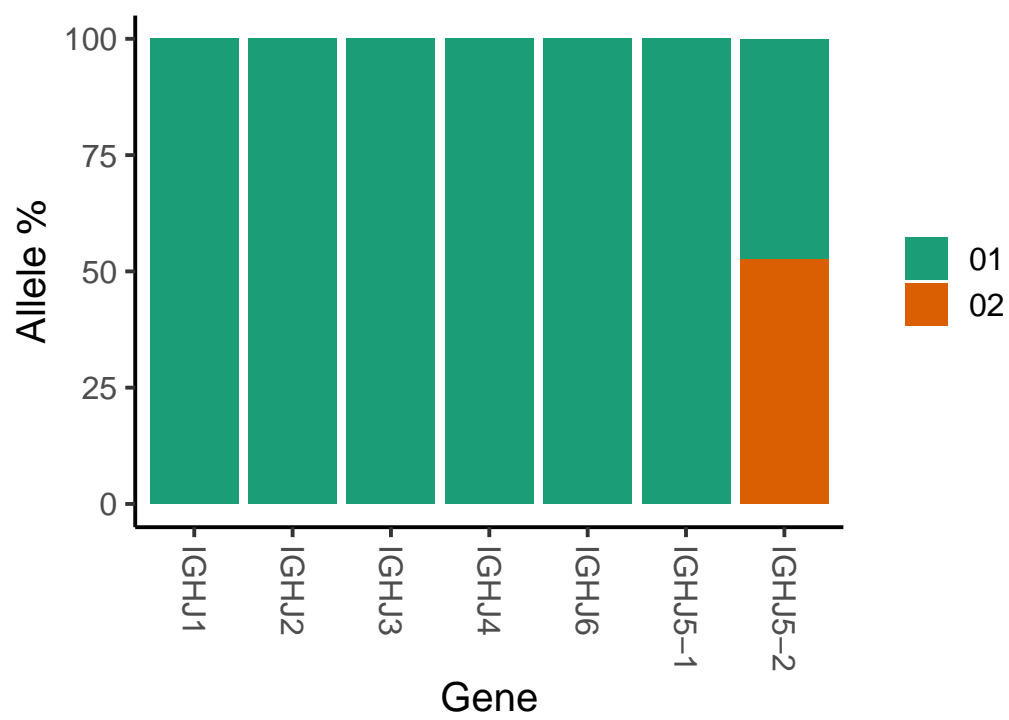


IGHV7-135*02_S1424

11 sequences assigned
No exact matches.



Allele Usage



Sequence Count by IGHJ5–2 allele usage



Warning – no inferred sequences found.