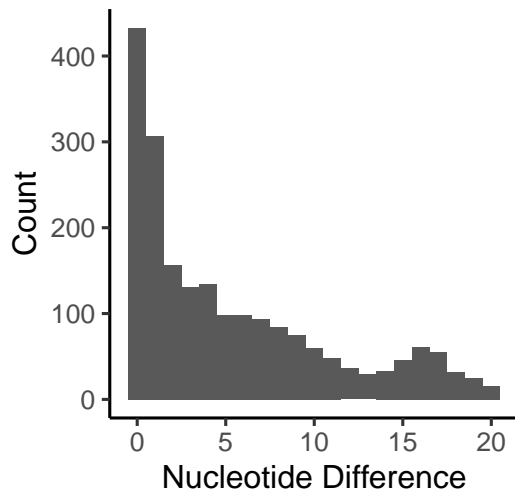


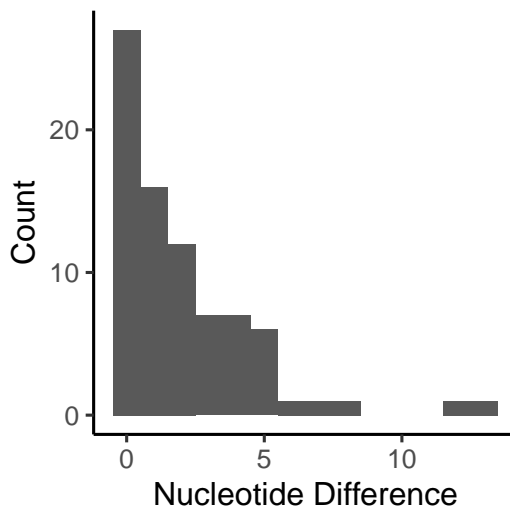
IGHV1-60*01_S7772

2232 sequences assigned
433 (19.4%) exact matches, in which:
328 unique CDR3
8 unique J



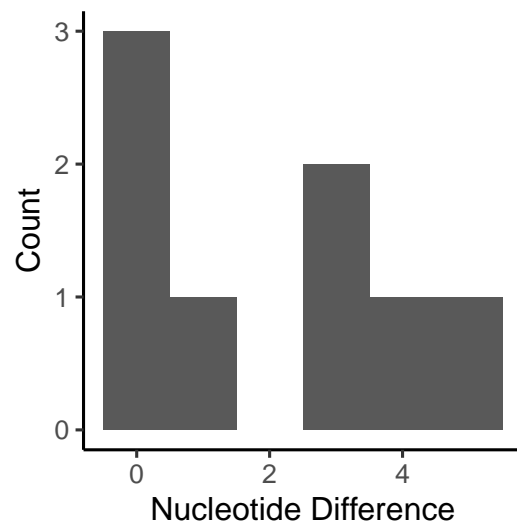
IGHV1-138*01_S0851

80 sequences assigned
27 (33.8%) exact matches, in which:
25 unique CDR3
6 unique J



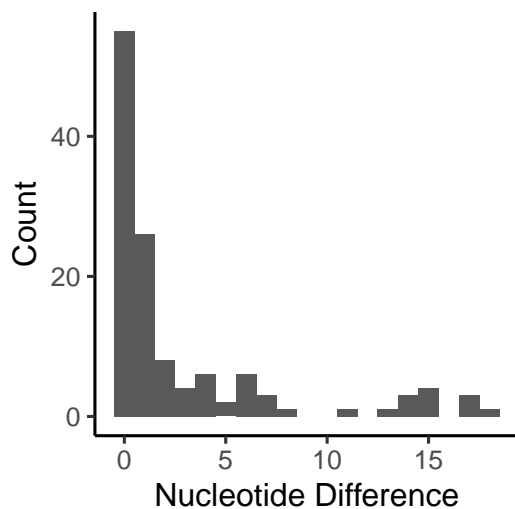
IGHV1-170*01_S3055

8 sequences assigned
3 (37.5%) exact matches, in which:
2 unique CDR3
1 unique J



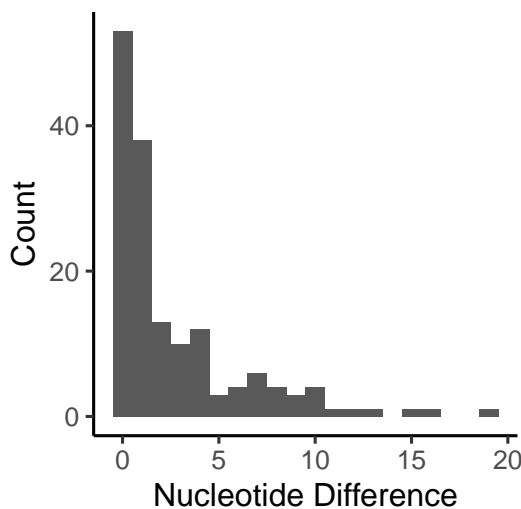
IGHV1-84*01_S2078

128 sequences assigned
55 (43%) exact matches, in which:
40 unique CDR3
7 unique J



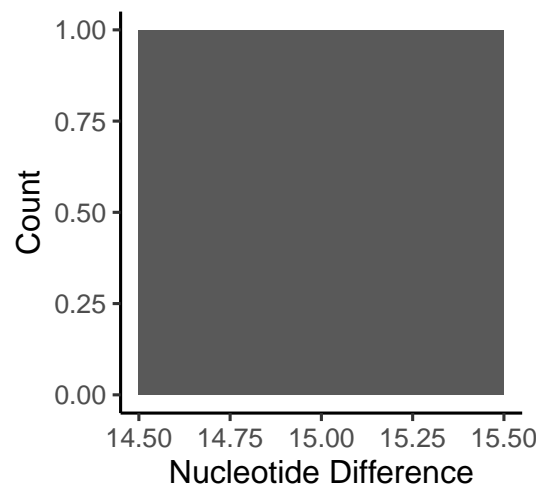
IGHV1-138*01_S2054

157 sequences assigned
53 (33.8%) exact matches, in which:
45 unique CDR3
6 unique J



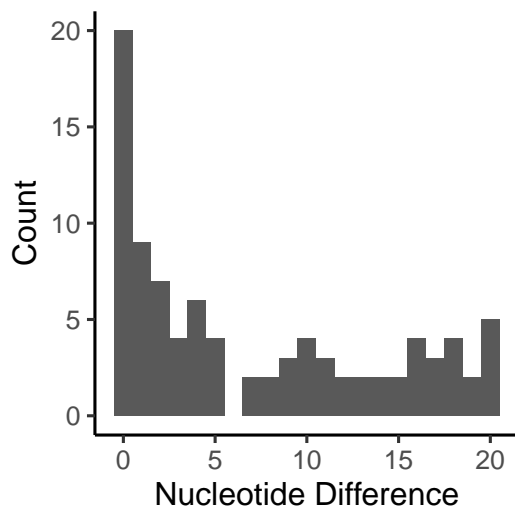
IGHV1-NL_1*01_S8523

1 sequences assigned
No exact matches.



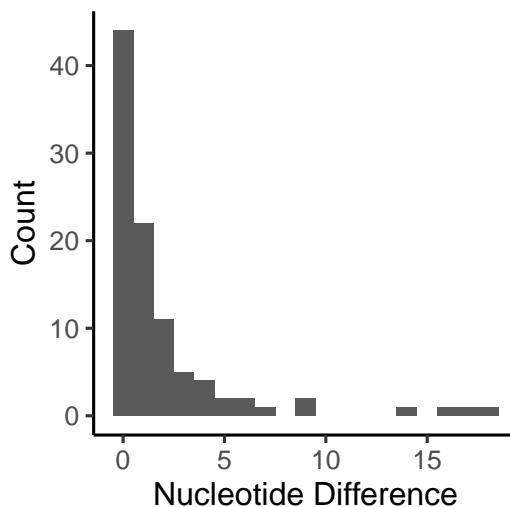
IGHV1-124*01_S6748

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



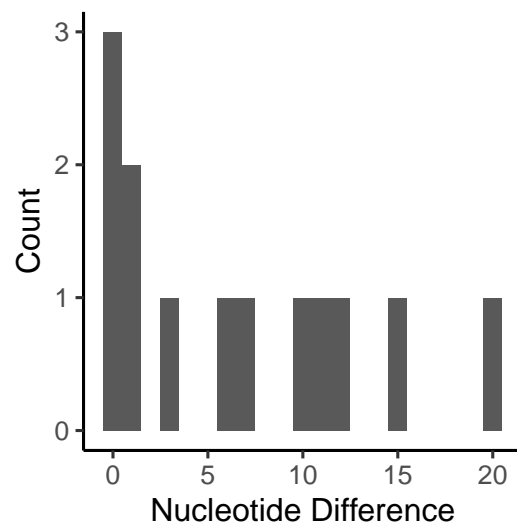
IGHV1-138*01_S6073

97 sequences assigned
44 (45.4%) exact matches, in which:
42 unique CDR3
6 unique J



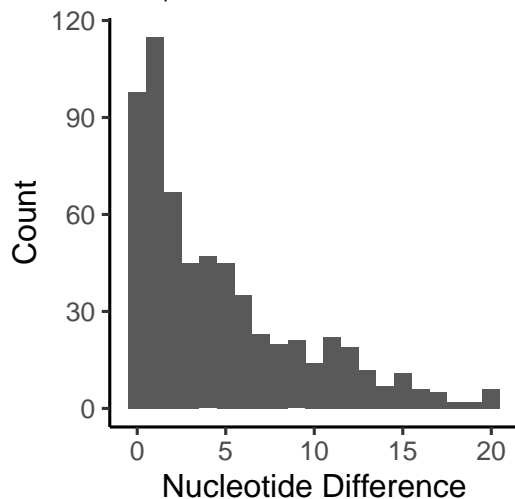
IGHV1-NL_2*01_S2245

18 sequences assigned
3 (16.7%) exact matches, in which:
2 unique CDR3
1 unique J



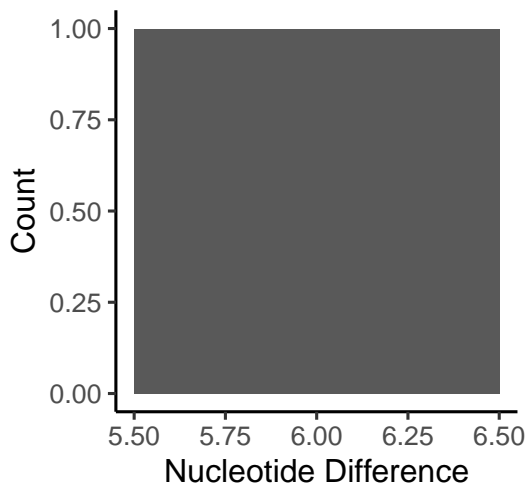
IGHV2-7*02_S4285

648 sequences assigned
98 (15.1%) exact matches, in which:
71 unique CDR3
7 unique J



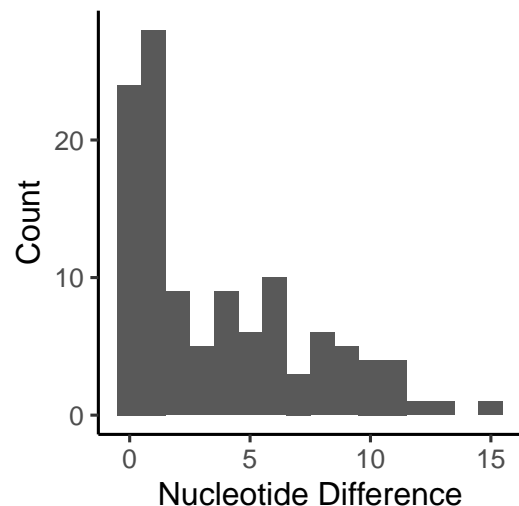
IGHV2-173*01_S2781

3 sequences assigned
No exact matches.



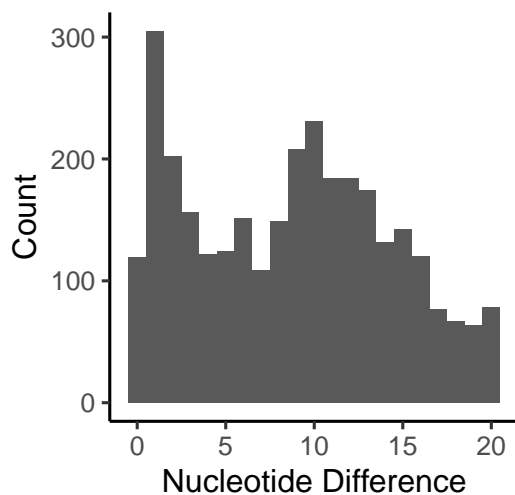
IGHV2-NL_2*01_S2193

117 sequences assigned
24 (20.5%) exact matches, in which:
19 unique CDR3
6 unique J



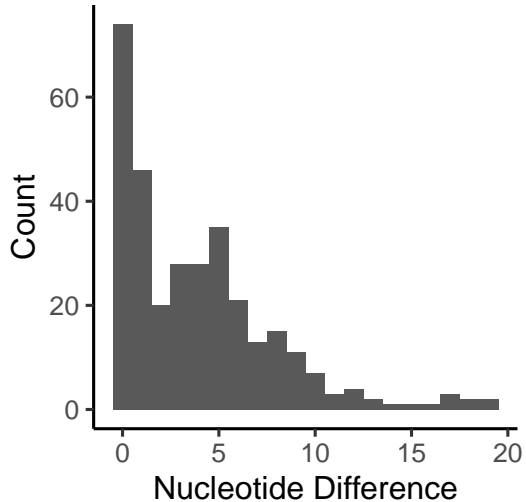
IGHV2-69*01_S0230

3505 sequences assigned
119 (3.4%) exact matches, in which:
87 unique CDR3
8 unique J



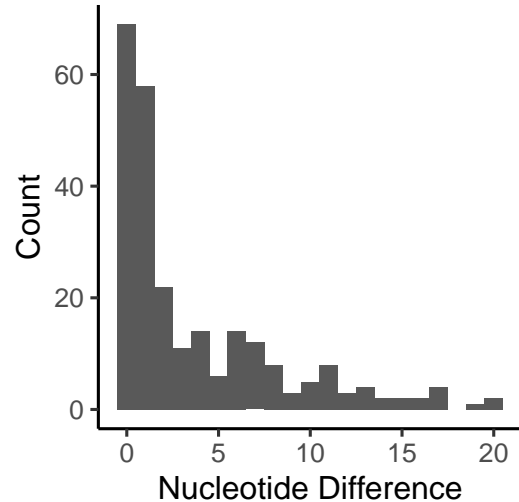
IGHV2-NL_1*01_S7542

320 sequences assigned
74 (23.1%) exact matches, in which:
47 unique CDR3
6 unique J



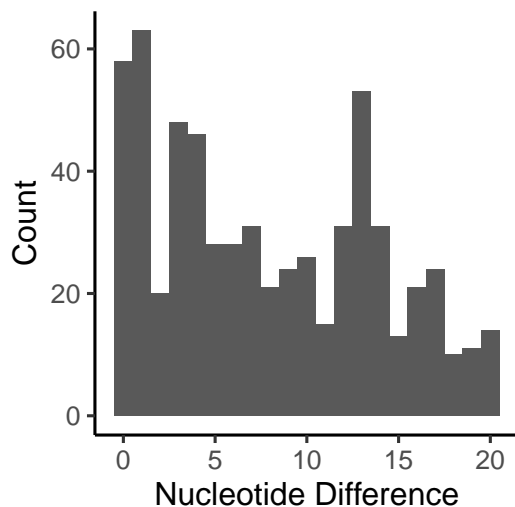
IGHV2-NL_2*01_S6246

252 sequences assigned
69 (27.4%) exact matches, in which:
49 unique CDR3
7 unique J



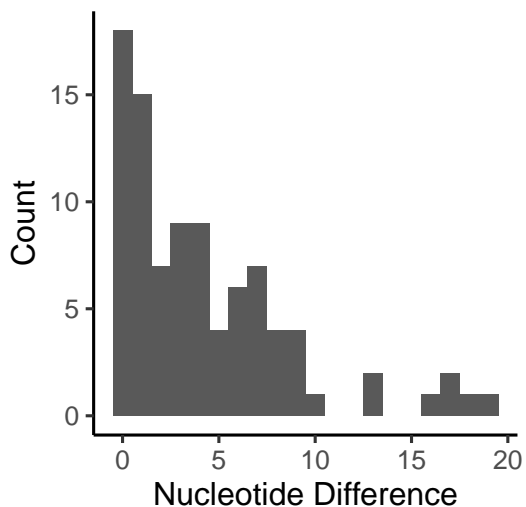
IGHV2-118*01_S0293

672 sequences assigned
58 (8.6%) exact matches, in which:
45 unique CDR3
7 unique J



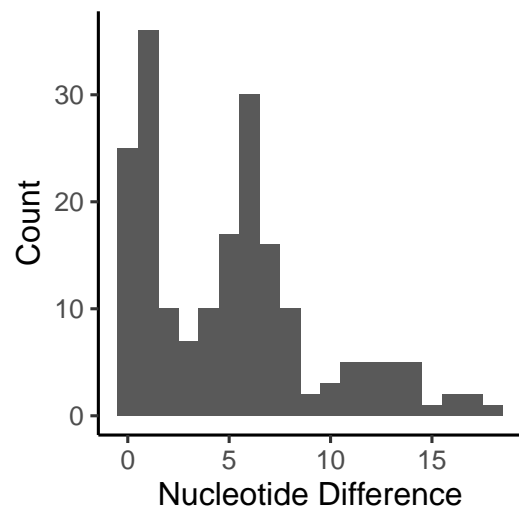
IGHV2-NL_1*01_S7542_(

91 sequences assigned
18 (19.8%) exact matches, in which:
17 unique CDR3
4 unique J



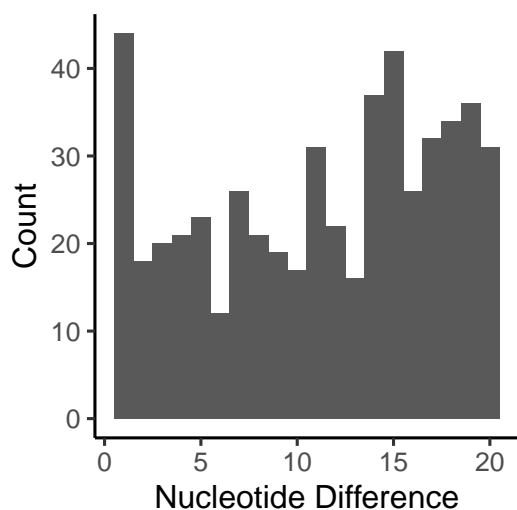
IGHV3-5*01_S7285

194 sequences assigned
25 (12.9%) exact matches, in which:
19 unique CDR3
5 unique J



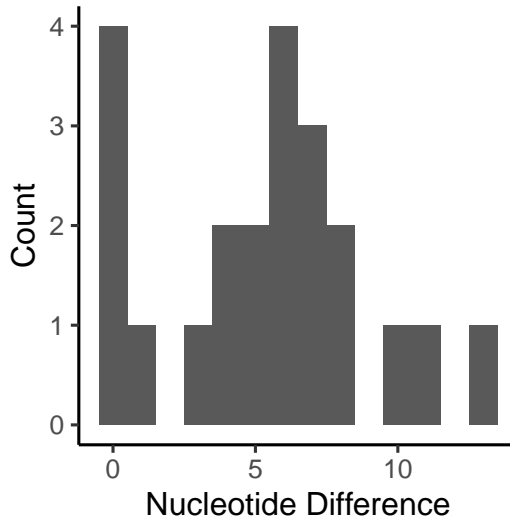
IGHV3-9*01_S8777

728 sequences assigned
No exact matches.



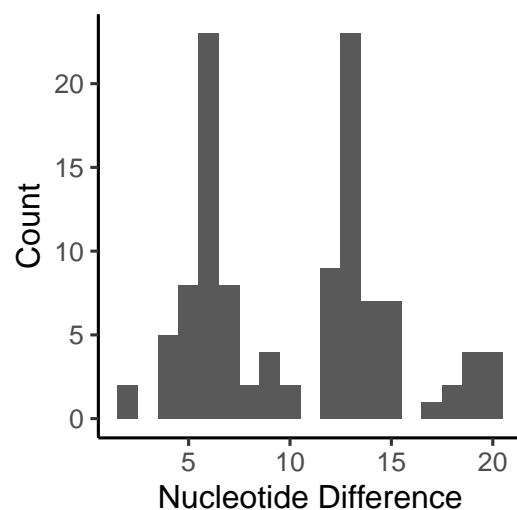
IGHV3-34*01_S1123

26 sequences assigned
4 (15.4%) exact matches, in which:
4 unique CDR3
3 unique J



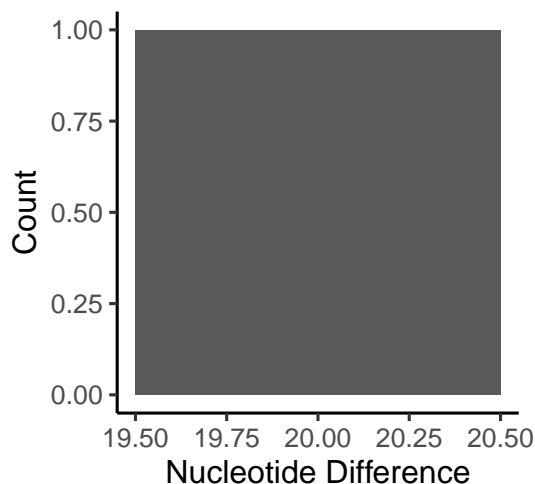
IGHV3-37*01_S0586

119 sequences assigned
No exact matches.



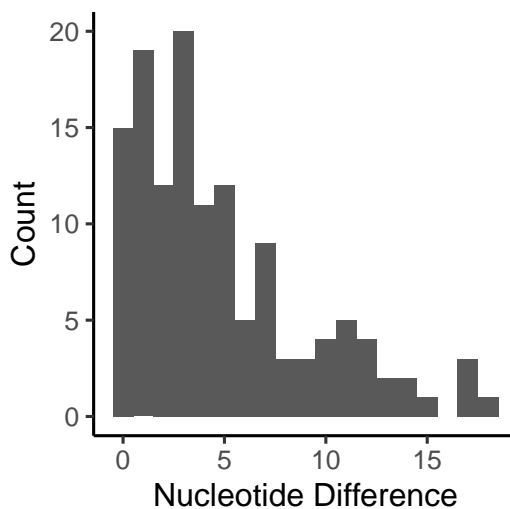
IGHV3-28*01_S3617

6 sequences assigned
No exact matches.



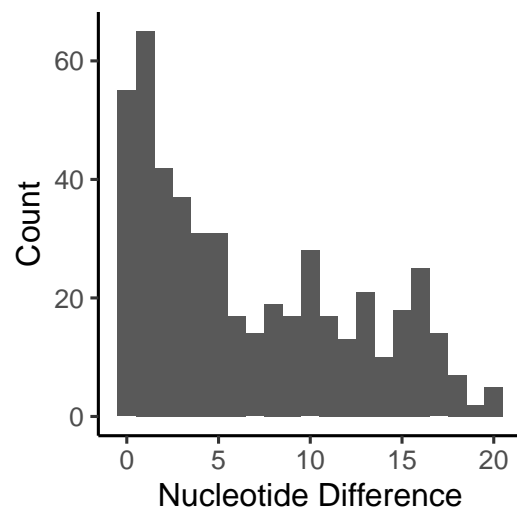
IGHV3-36*01_S6650

136 sequences assigned
15 (11%) exact matches, in which:
15 unique CDR3
6 unique J



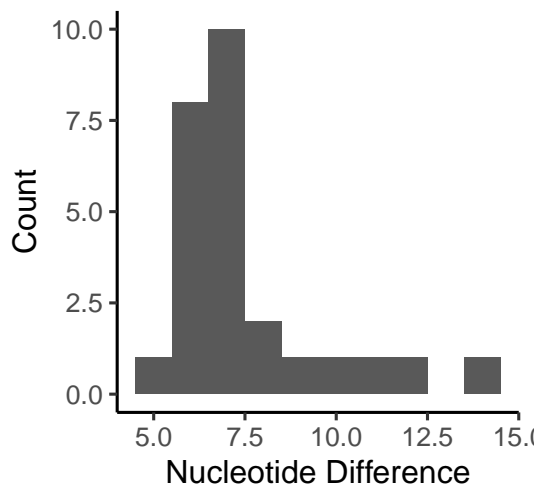
IGHV3-50*01_S9862

513 sequences assigned
55 (10.7%) exact matches, in which:
41 unique CDR3
5 unique J



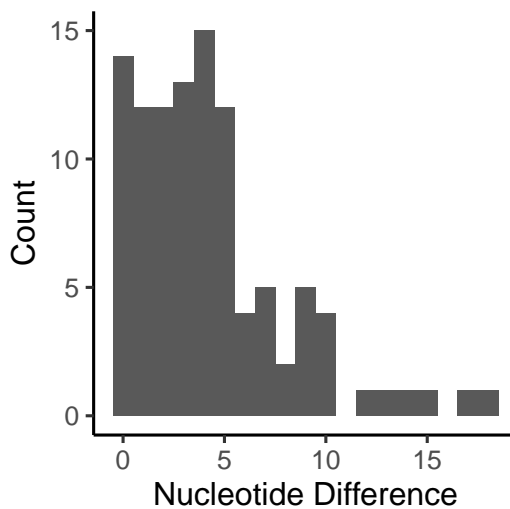
IGHV3-28*01_S7540

27 sequences assigned
No exact matches.



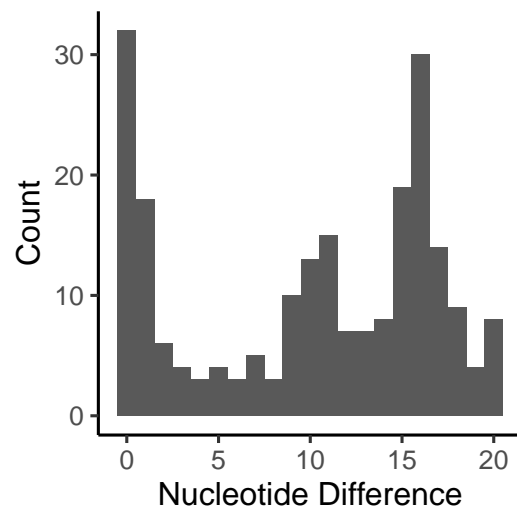
IGHV3-36*01_S6740

107 sequences assigned
14 (13.1%) exact matches, in which:
11 unique CDR3
5 unique J



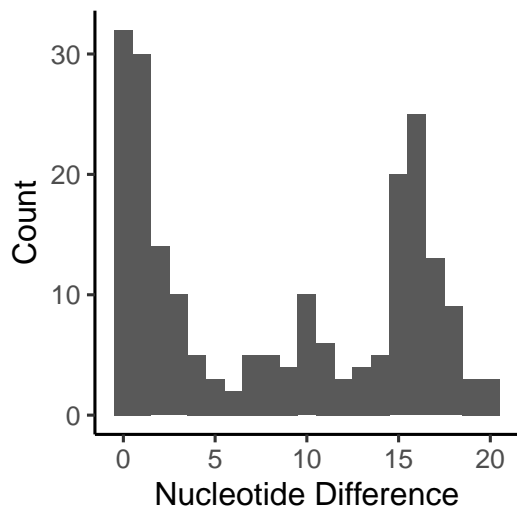
IGHV3-52*01_S8160

230 sequences assigned
32 (13.9%) exact matches, in which:
27 unique CDR3
4 unique J



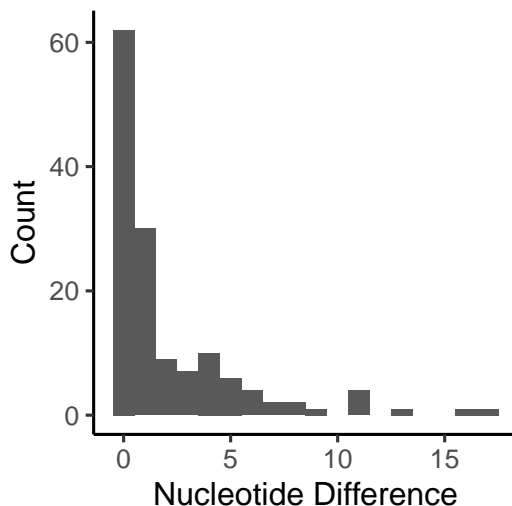
IGHV3-52*02_S4550

217 sequences assigned
32 (14.7%) exact matches, in which:
24 unique CDR3
6 unique J



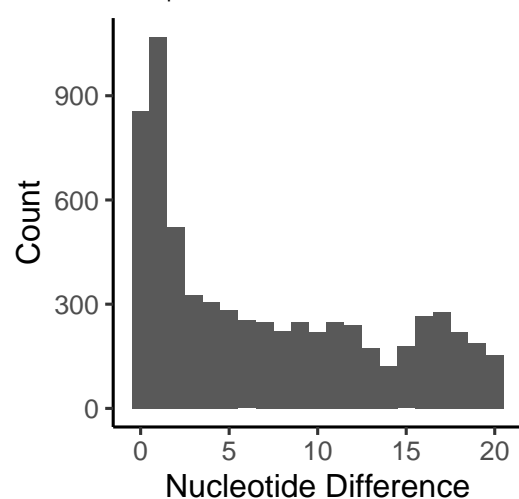
IGHV3-73*02_S0606

157 sequences assigned
62 (39.5%) exact matches, in which:
52 unique CDR3
7 unique J



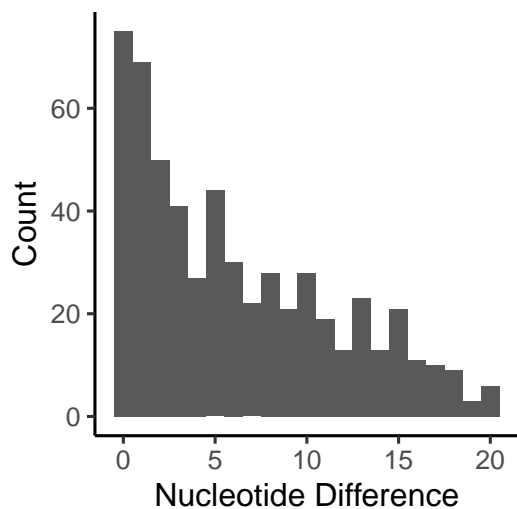
IGHV3-76*02_S4190

7572 sequences assigned
856 (11.3%) exact matches, in which:
725 unique CDR3
7 unique J



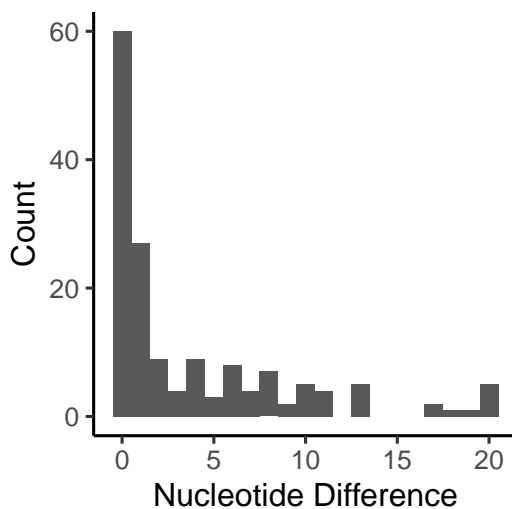
IGHV3-53*01_S8913

593 sequences assigned
75 (12.6%) exact matches, in which:
66 unique CDR3
6 unique J



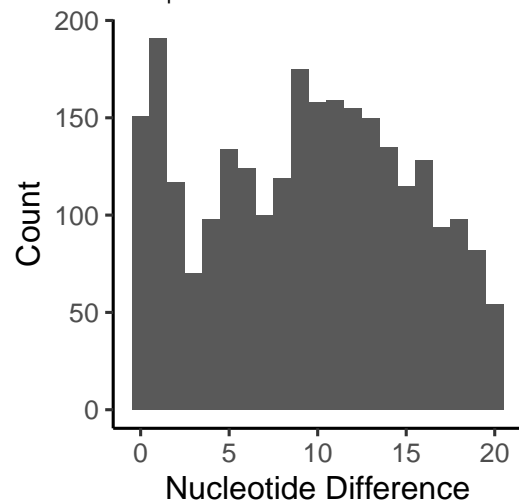
IGHV3-73*02_S4889

169 sequences assigned
60 (35.5%) exact matches, in which:
52 unique CDR3
6 unique J



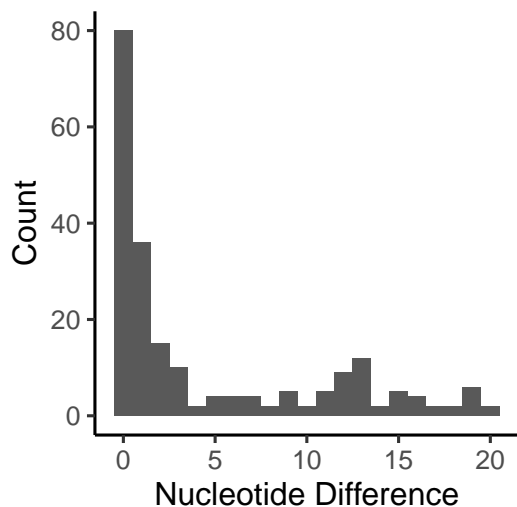
IGHV3-76*02_S4686

2951 sequences assigned
151 (5.1%) exact matches, in which:
130 unique CDR3
7 unique J



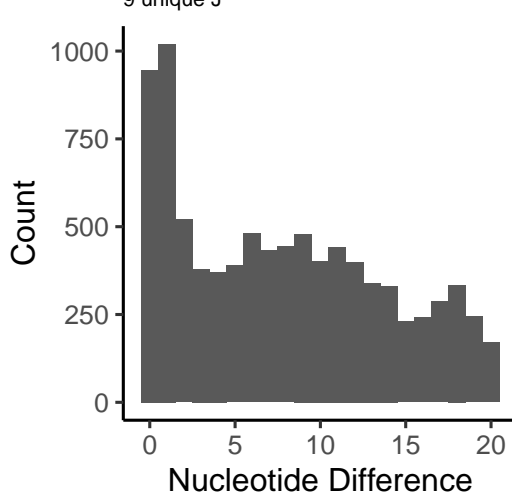
IGHV3-73*01_S7929

241 sequences assigned
80 (33.2%) exact matches, in which:
64 unique CDR3
7 unique J



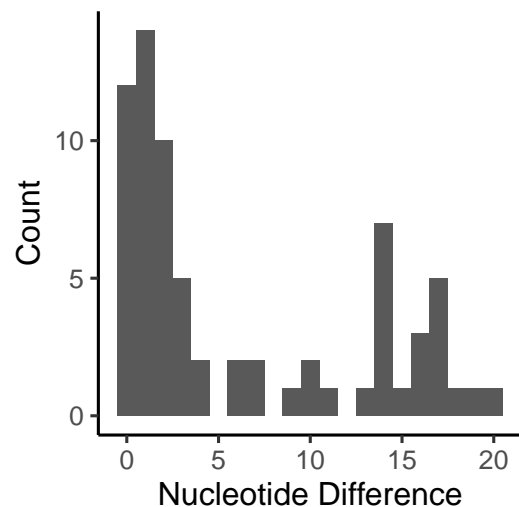
IGHV3-76*01_S9591

11284 sequences assigned
946 (8.4%) exact matches, in which:
779 unique CDR3
9 unique J



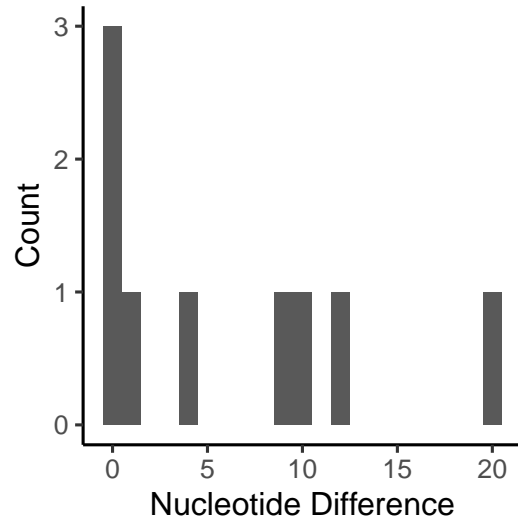
IGHV3-83*01_S5932

72 sequences assigned
12 (16.7%) exact matches, in which:
11 unique CDR3
4 unique J



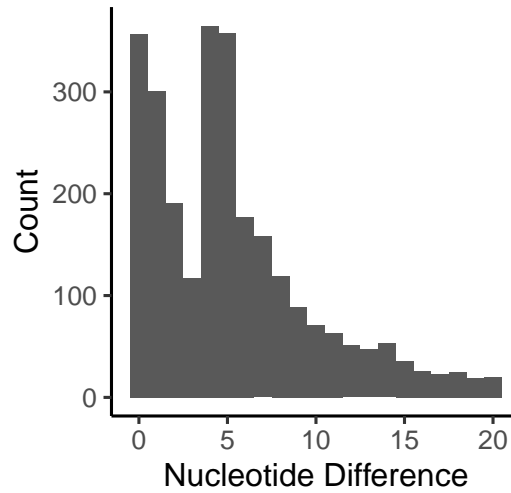
IGHV3-83*02_S1476

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



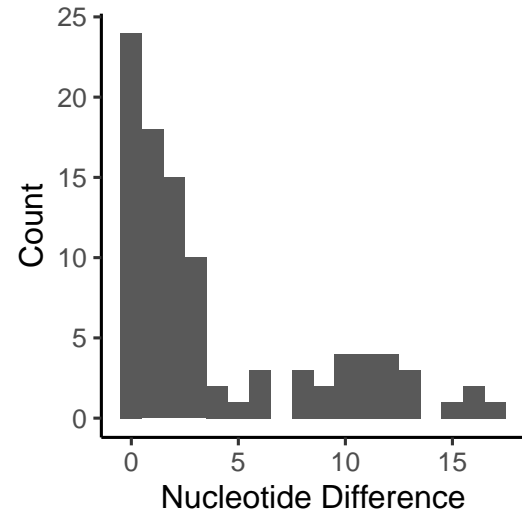
IGHV3-94*01_S8766

2854 sequences assigned
357 (12.5%) exact matches, in which:
298 unique CDR3
7 unique J



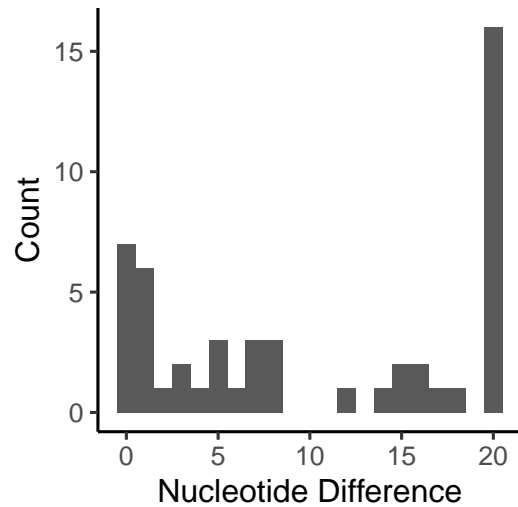
IGHV3-119*01_S1683

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



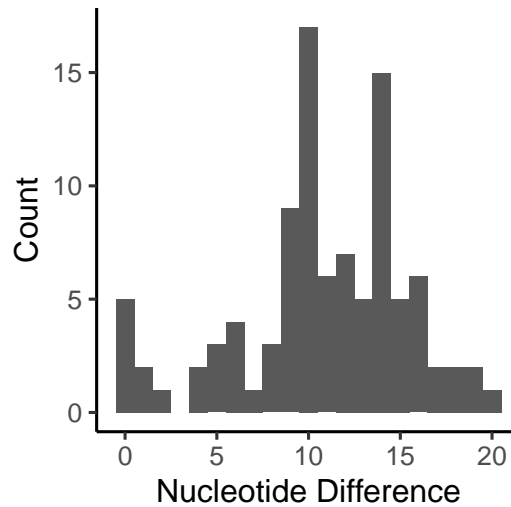
IGHV3-87*01_S2131

97 sequences assigned
7 (7.2%) exact matches, in which:
4 unique CDR3
2 unique J



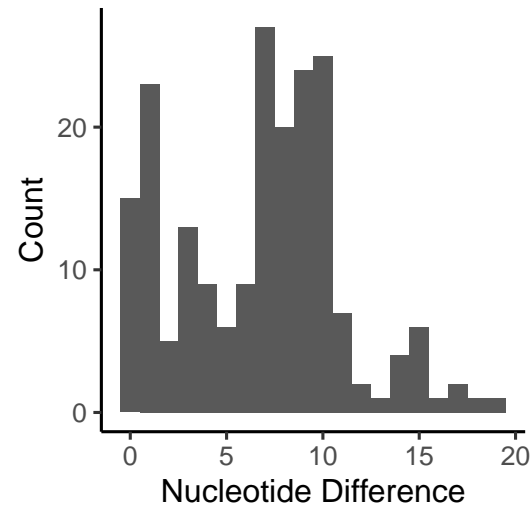
IGHV3-100*01_S5468

105 sequences assigned
5 (4.8%) exact matches, in which:
4 unique CDR3
1 unique J



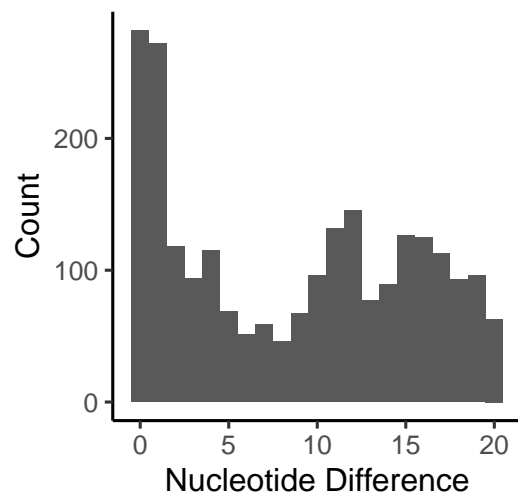
IGHV3-120*01_S7674

209 sequences assigned
15 (7.2%) exact matches, in which:
9 unique CDR3
2 unique J



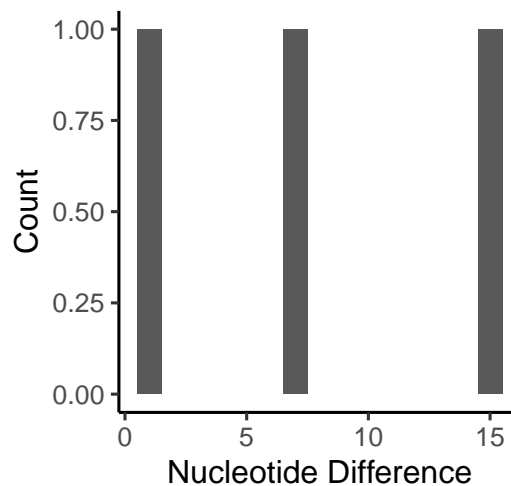
IGHV3-88*02_S1054

2588 sequences assigned
282 (10.9%) exact matches, in which:
226 unique CDR3
7 unique J



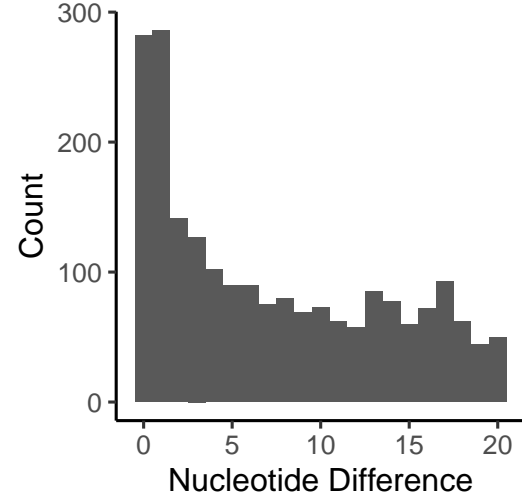
IGHV3-103*01_S1165

9 sequences assigned
No exact matches.



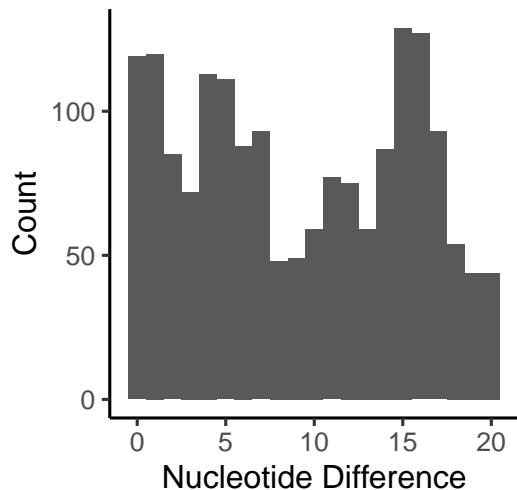
IGHV3-122*01_S8388

2316 sequences assigned
282 (12.2%) exact matches, in which:
229 unique CDR3
7 unique J



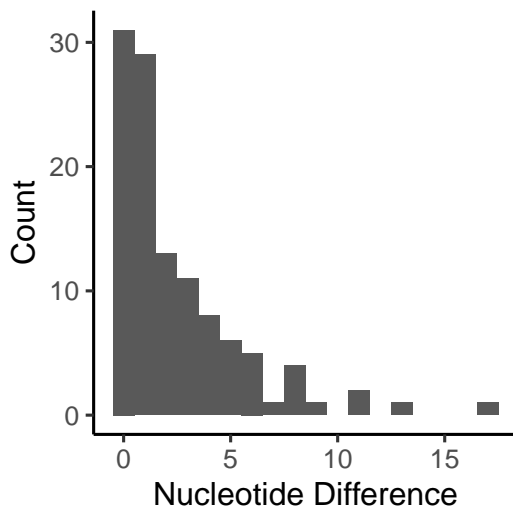
IGHV3-128*01_S3124

2178 sequences assigned
119 (5.5%) exact matches, in which:
91 unique CDR3
7 unique J



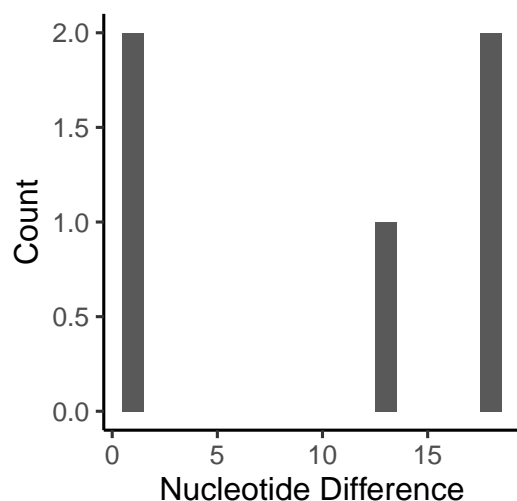
IGHV3-141*02_S4330

113 sequences assigned
31 (27.4%) exact matches, in which:
26 unique CDR3
5 unique J



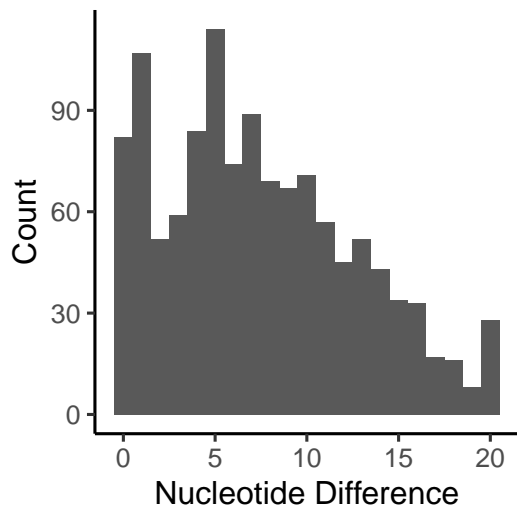
IGHV3-152*01_S7388

5 sequences assigned
No exact matches.



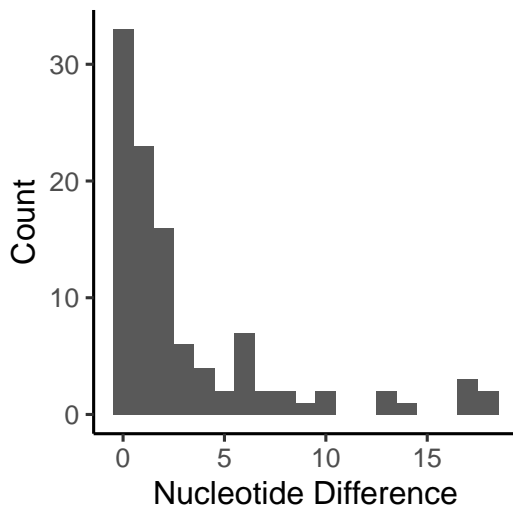
IGHV3-128*02_S7423

1345 sequences assigned
82 (6.1%) exact matches, in which:
65 unique CDR3
7 unique J



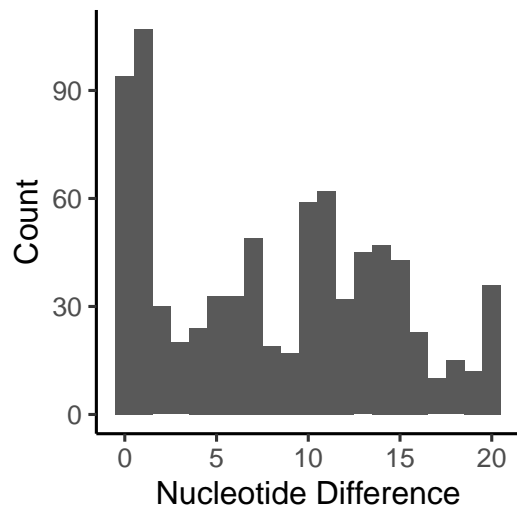
IGHV3-141*02_S4949

109 sequences assigned
33 (30.3%) exact matches, in which:
27 unique CDR3
7 unique J



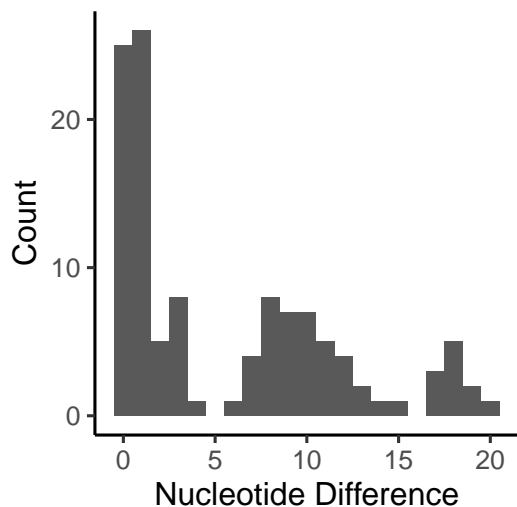
IGHV3-172*01_S1597

990 sequences assigned
94 (9.5%) exact matches, in which:
75 unique CDR3
7 unique J



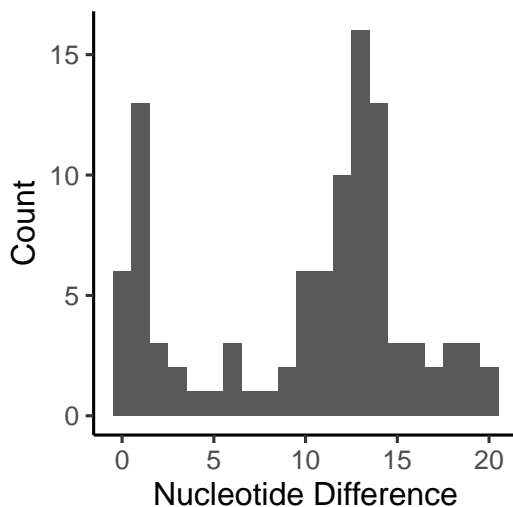
IGHV3-141*01_S2251

122 sequences assigned
25 (20.5%) exact matches, in which:
23 unique CDR3
5 unique J



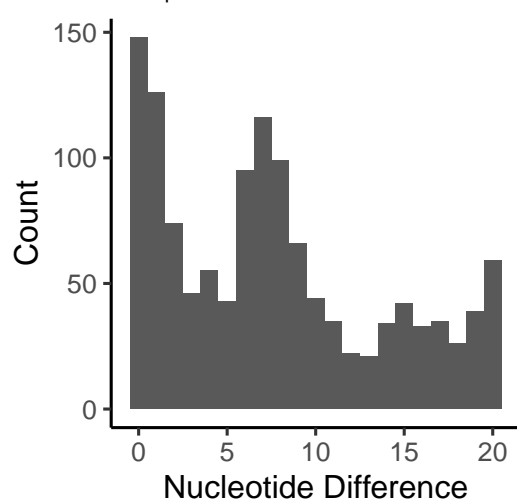
IGHV3-143*01_S1591

104 sequences assigned
6 (5.8%) exact matches, in which:
5 unique CDR3
3 unique J



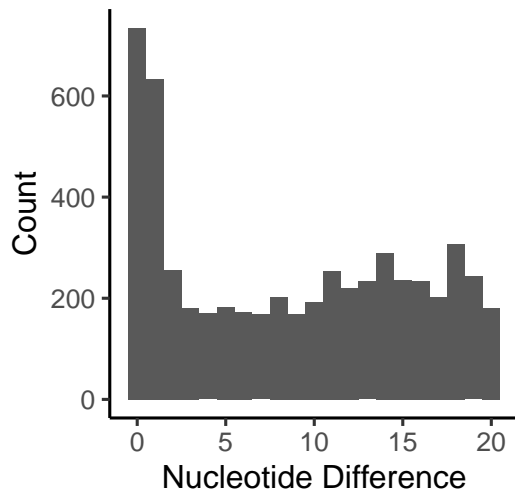
IGHV3-177*01_S8409

1784 sequences assigned
148 (8.3%) exact matches, in which:
123 unique CDR3
7 unique J



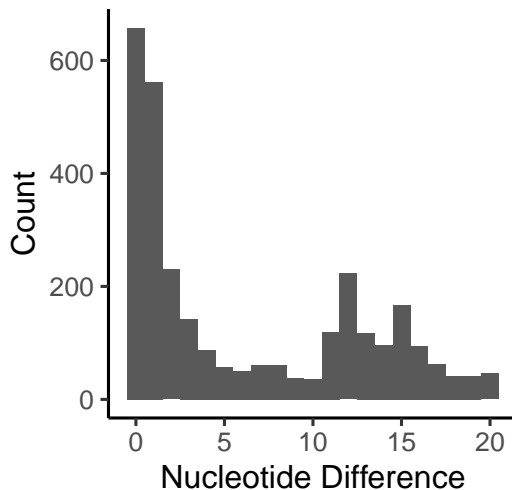
IGHV3-187*01_S1387

6297 sequences assigned
735 (11.7%) exact matches, in which:
586 unique CDR3
8 unique J



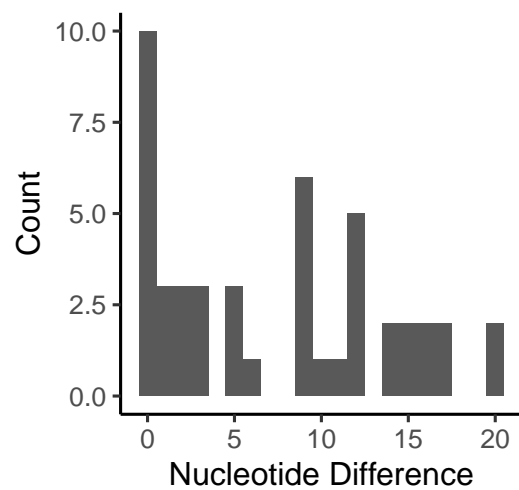
IGHV3-NL_1*01_S6560

3308 sequences assigned
658 (19.9%) exact matches, in which:
535 unique CDR3
7 unique J



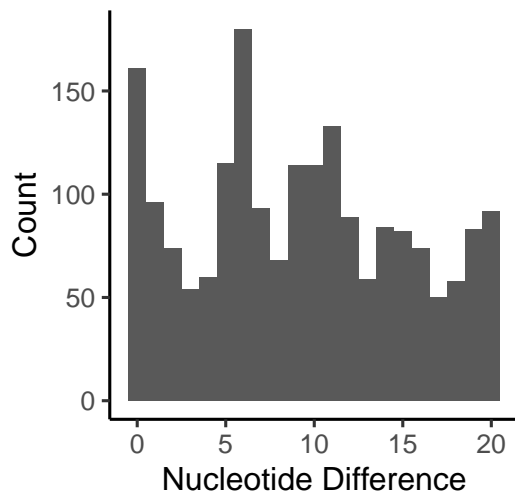
IGHV3-NL_12*02_S3129

81 sequences assigned
10 (12.3%) exact matches, in which:
10 unique CDR3
4 unique J



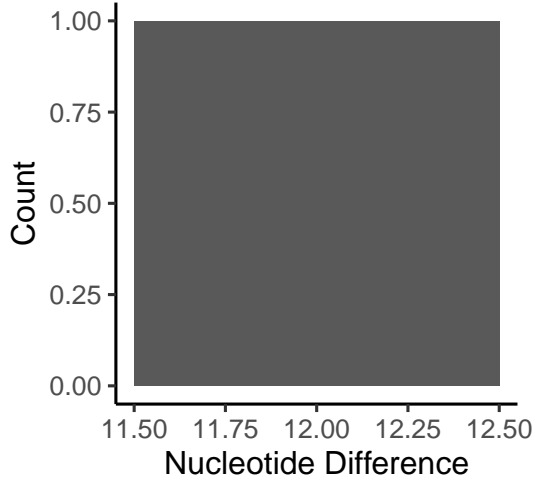
IGHV3-187*01_S9337

2286 sequences assigned
161 (7%) exact matches, in which:
133 unique CDR3
8 unique J



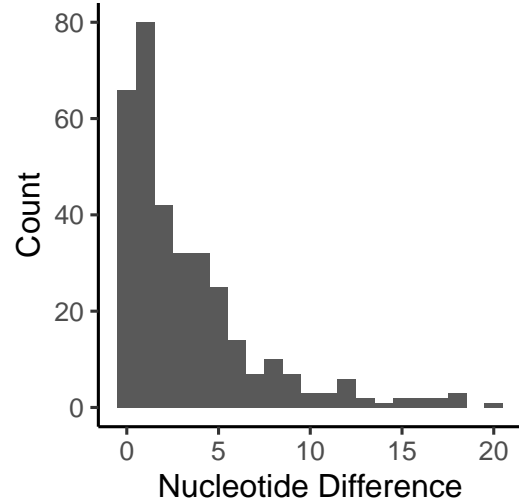
IGHV3-NL_10*02_S3155

1 sequences assigned
No exact matches.



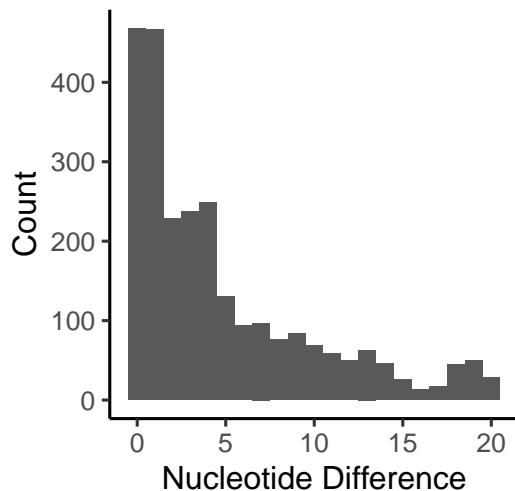
IGHV3-NL_13*01_S3277

356 sequences assigned
66 (18.5%) exact matches, in which:
49 unique CDR3
7 unique J



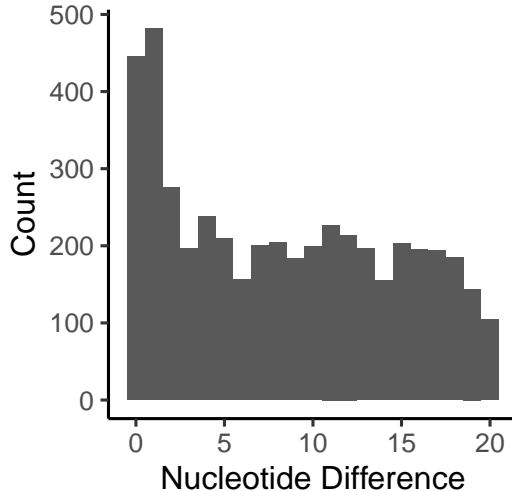
IGHV3-NL_1*01_S4906

2671 sequences assigned
468 (17.5%) exact matches, in which:
375 unique CDR3
9 unique J



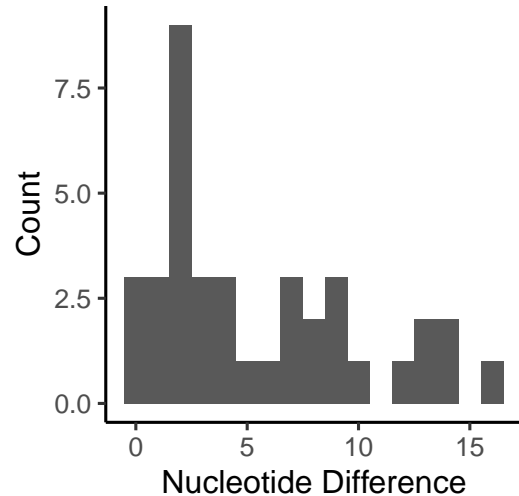
IGHV3-NL_11*01_S4102

5781 sequences assigned
446 (7.7%) exact matches, in which:
372 unique CDR3
8 unique J



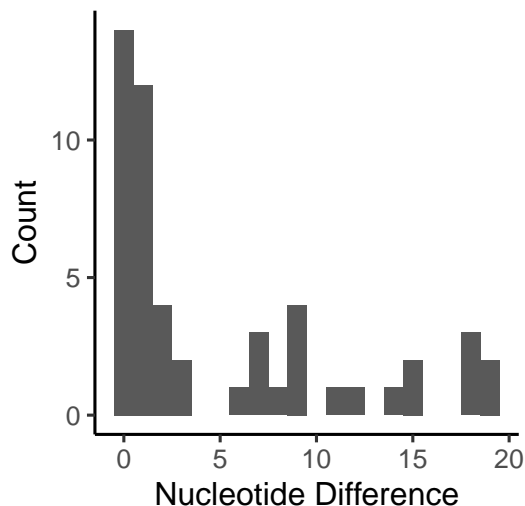
IGHV3-NL_16*01_S5994

38 sequences assigned
3 (7.9%) exact matches, in which:
3 unique CDR3
2 unique J



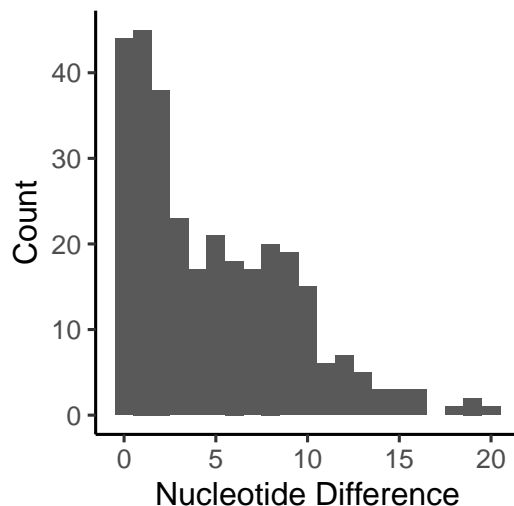
IGHV3–NL_16*01_S7722

52 sequences assigned
14 (26.9%) exact matches, in which:
13 unique CDR3
4 unique J



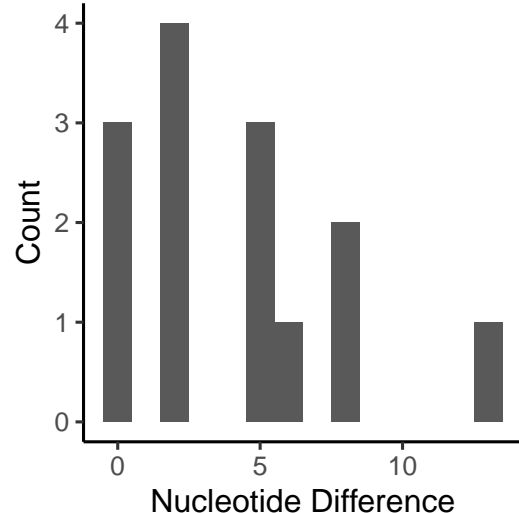
IGHV3–NL_18*01_S3886

309 sequences assigned
44 (14.2%) exact matches, in which:
31 unique CDR3
5 unique J



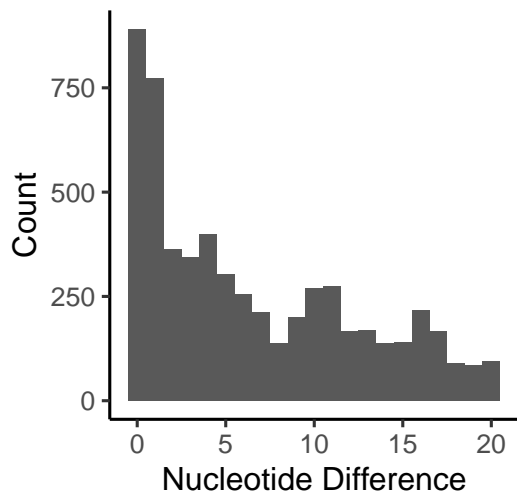
IGHV3–NL_19*01_S2166

14 sequences assigned
3 (21.4%) exact matches, in which:
3 unique CDR3
0 unique J



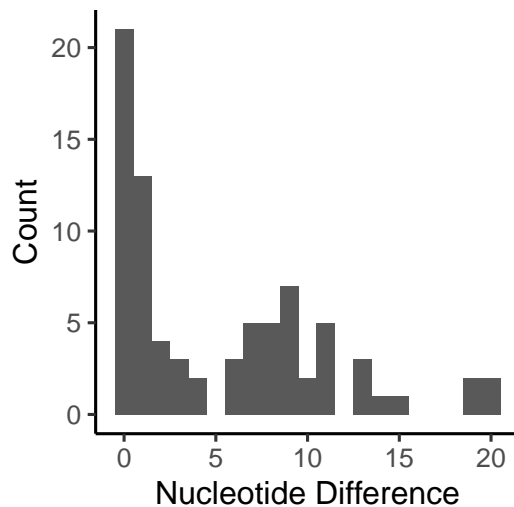
IGHV3–NL_17*01_S0120

5958 sequences assigned
891 (15%) exact matches, in which:
709 unique CDR3
8 unique J



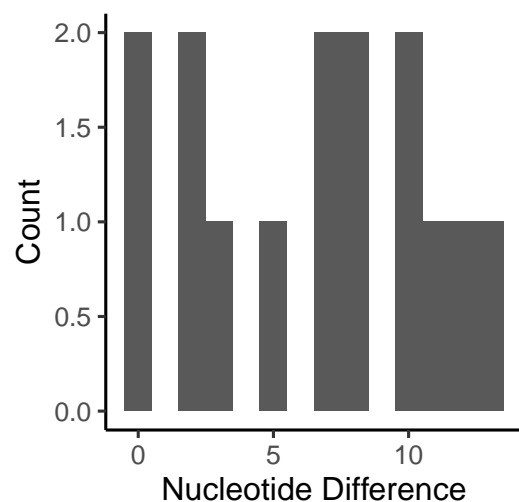
IGHV3–NL_18*01_S6396

94 sequences assigned
21 (22.3%) exact matches, in which:
19 unique CDR3
6 unique J



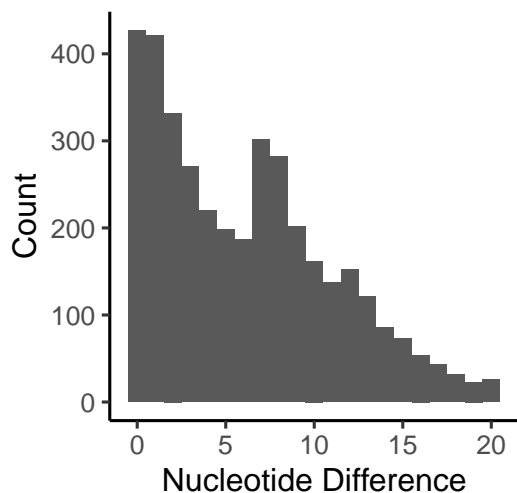
IGHV3–NL_2*01_S9710

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



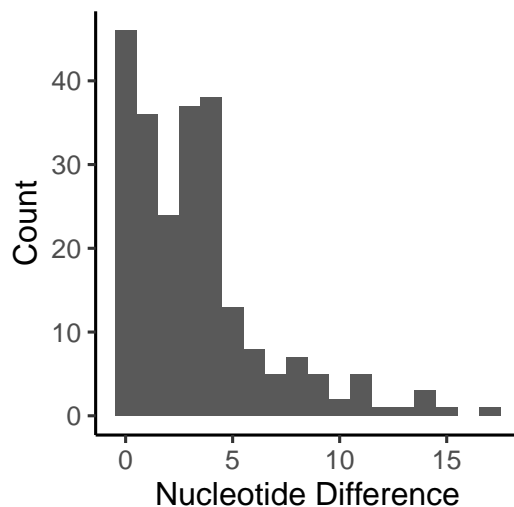
IGHV3–NL_17*01_S6268

4008 sequences assigned
427 (10.7%) exact matches, in which:
341 unique CDR3
7 unique J



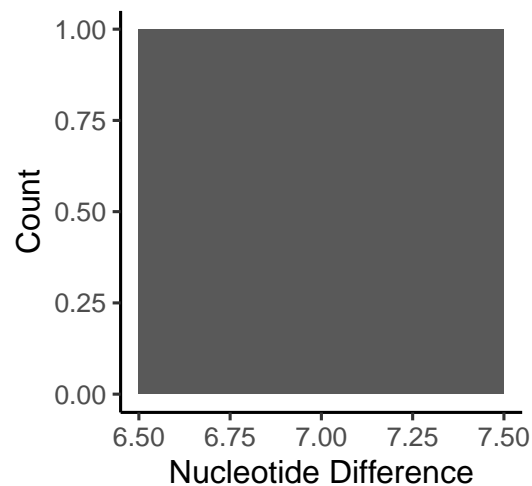
IGHV3–NL_18*01_S7220

233 sequences assigned
46 (19.7%) exact matches, in which:
38 unique CDR3
6 unique J



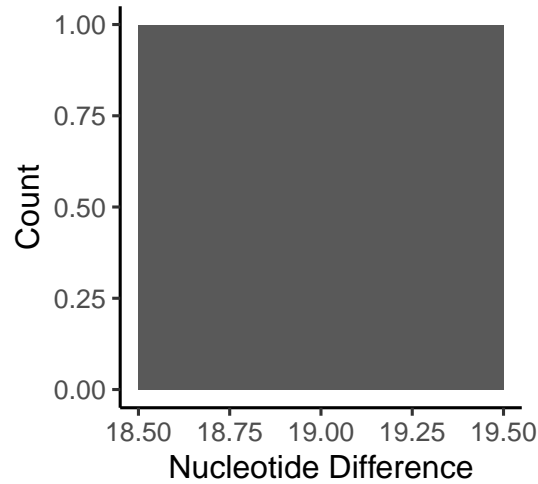
IGHV3–NL_4*01_S6875

1 sequences assigned
No exact matches.



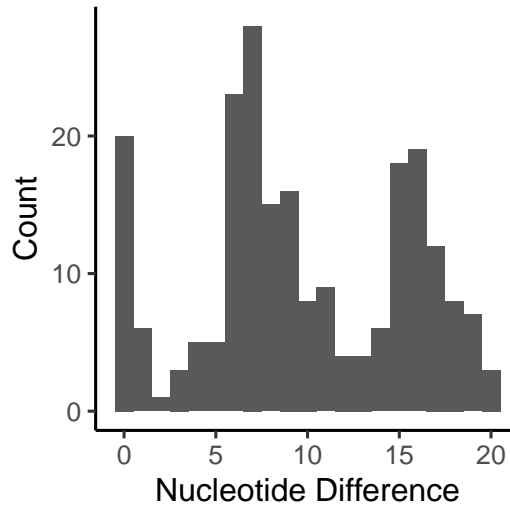
IGHV3–NL_4*01_S9635

3 sequences assigned
No exact matches.



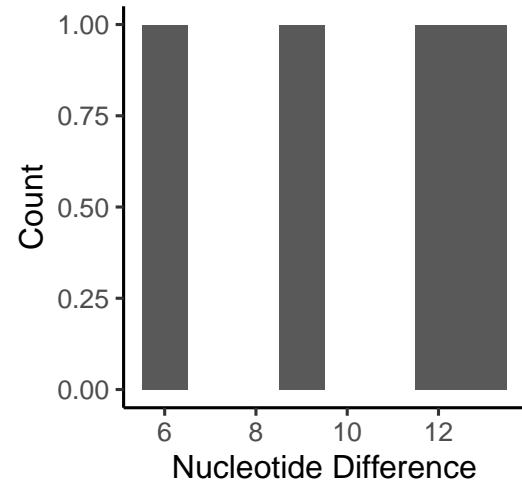
IGHV3–NL_8*01_S7415

264 sequences assigned
20 (7.6%) exact matches, in which:
15 unique CDR3
6 unique J



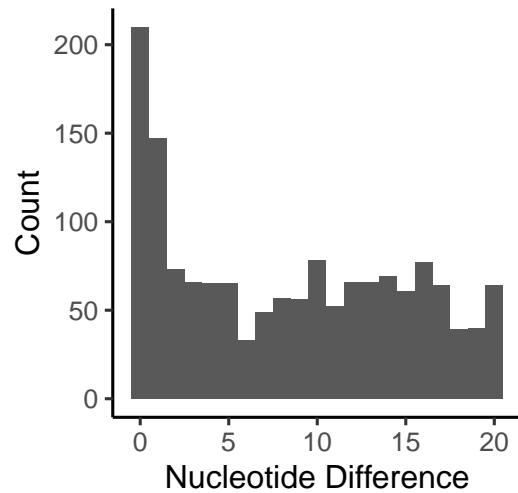
IGHV4–67*02_S1312

4 sequences assigned
No exact matches.



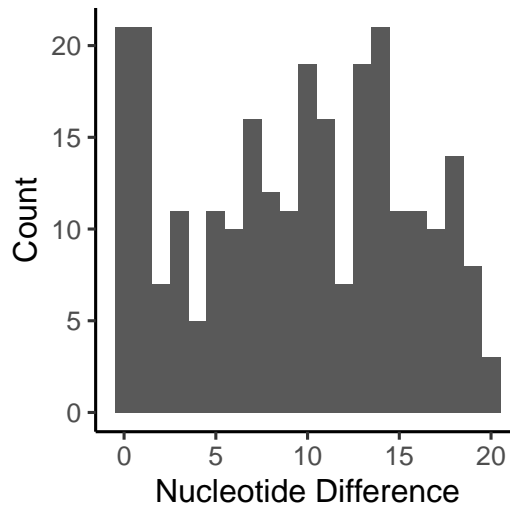
IGHV3–NL_5*01_S4429

1813 sequences assigned
210 (11.6%) exact matches, in which:
155 unique CDR3
7 unique J



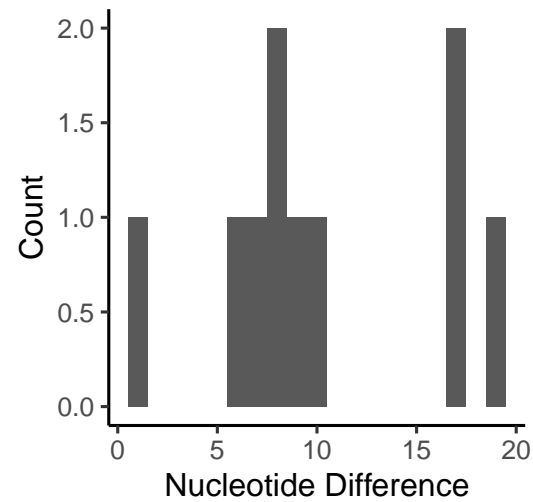
IGHV3–NL_8*01_S7474

293 sequences assigned
21 (7.2%) exact matches, in which:
19 unique CDR3
6 unique J



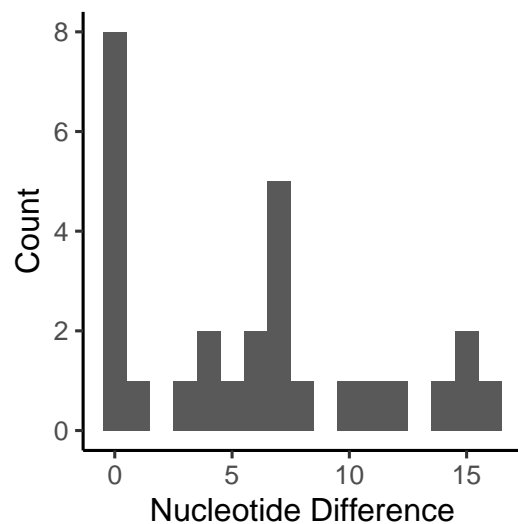
IGHV4–72*01_S8261

10 sequences assigned
No exact matches.



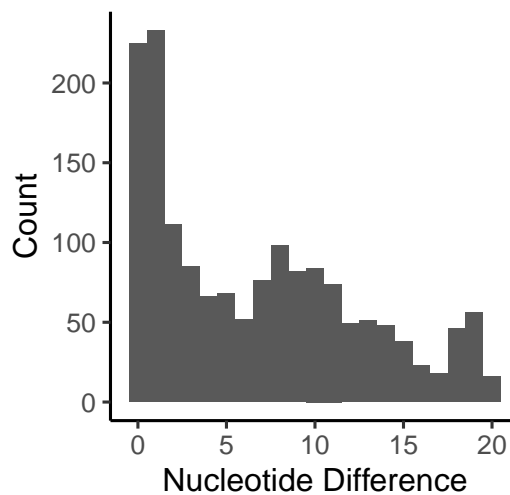
IGHV3–NL_6*02_S6474

28 sequences assigned
8 (28.6%) exact matches, in which:
7 unique CDR3
3 unique J



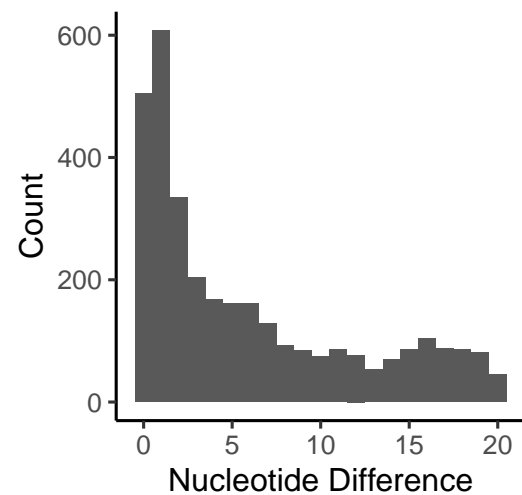
IGHV3–NL_9*01_S6098

2088 sequences assigned
225 (10.8%) exact matches, in which:
189 unique CDR3
7 unique J



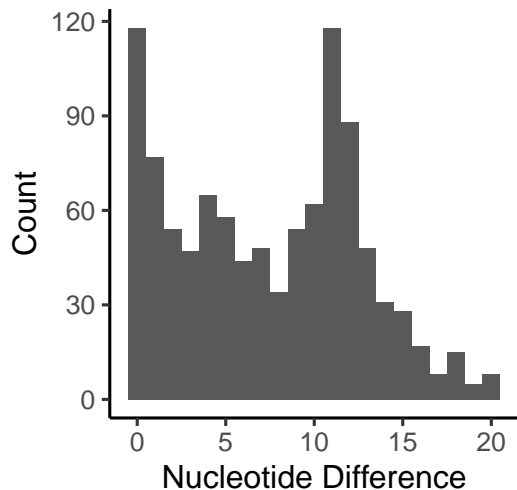
IGHV4–117*01_S2181

3657 sequences assigned
505 (13.8%) exact matches, in which:
464 unique CDR3
8 unique J



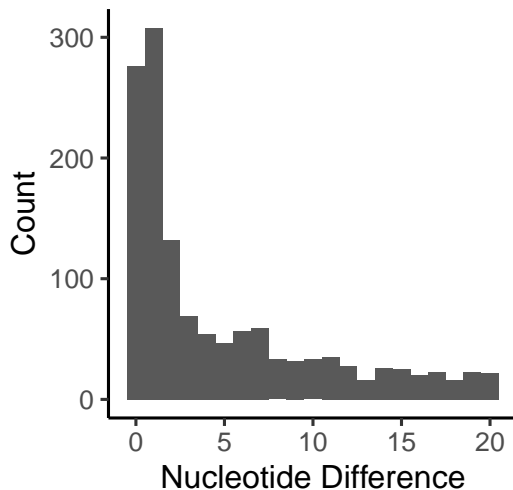
IGHV4-117*01_S6852

1059 sequences assigned
118 (11.1%) exact matches, in which:
106 unique CDR3
7 unique J



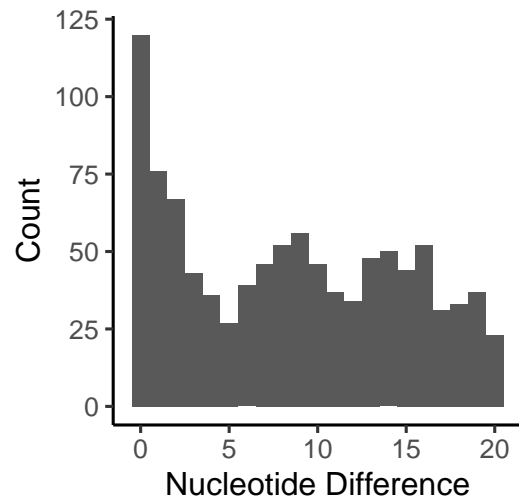
IGHV4-144*01_S0885

1416 sequences assigned
276 (19.5%) exact matches, in which:
250 unique CDR3
8 unique J



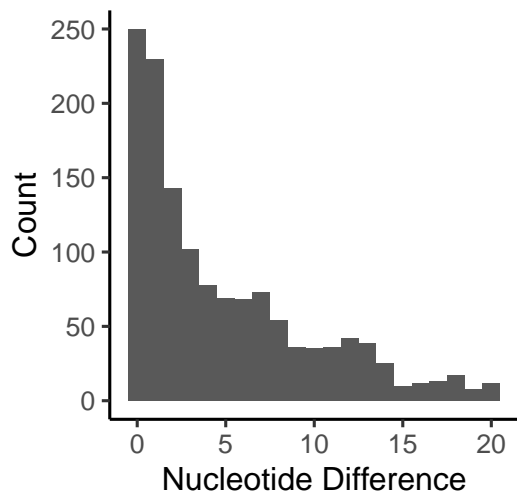
IGHV4-149*01_S2186

1141 sequences assigned
120 (10.5%) exact matches, in which:
101 unique CDR3
8 unique J



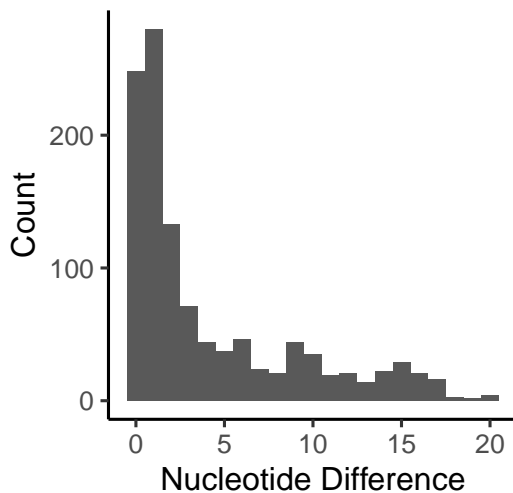
IGHV4-117*01_S7493

1397 sequences assigned
250 (17.9%) exact matches, in which:
229 unique CDR3
7 unique J



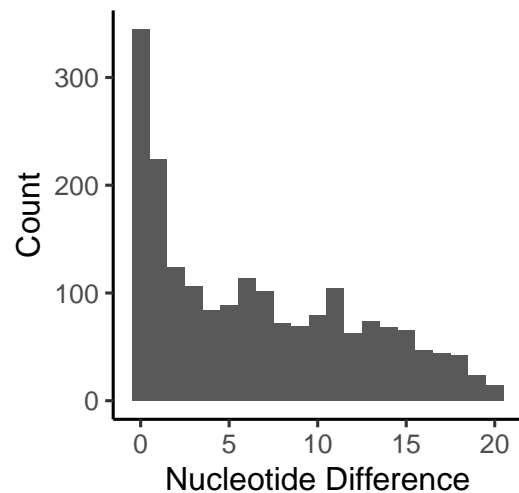
IGHV4-144*01_S6192

1202 sequences assigned
248 (20.6%) exact matches, in which:
225 unique CDR3
7 unique J



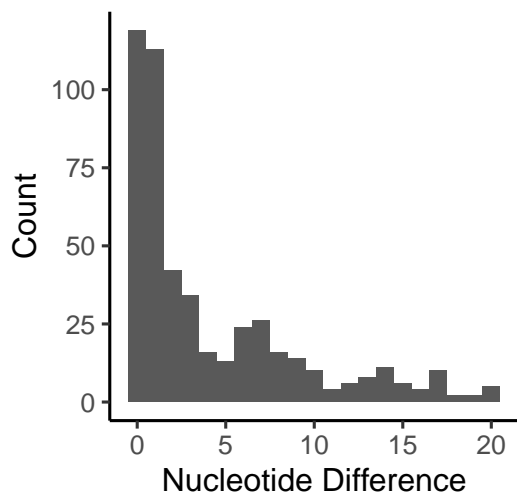
IGHV4-149*01_S4098

2096 sequences assigned
345 (16.5%) exact matches, in which:
317 unique CDR3
7 unique J



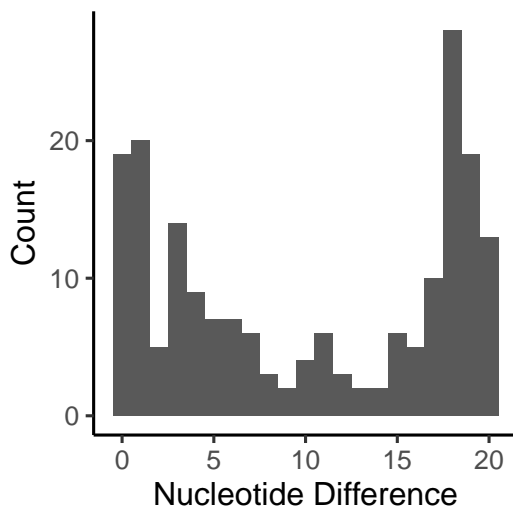
IGHV4-144*01_S0298

514 sequences assigned
119 (23.2%) exact matches, in which:
96 unique CDR3
6 unique J



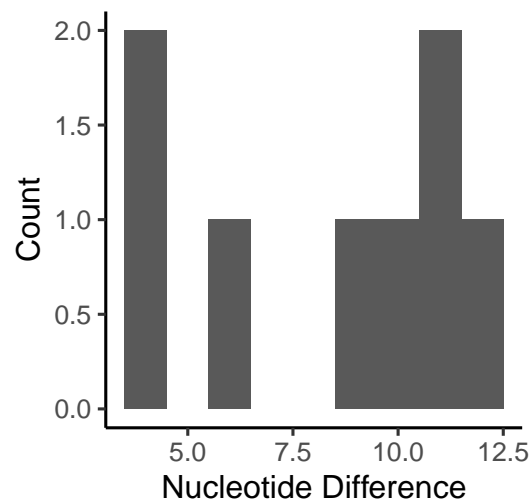
IGHV4-149*01_S0794

329 sequences assigned
19 (5.8%) exact matches, in which:
18 unique CDR3
5 unique J



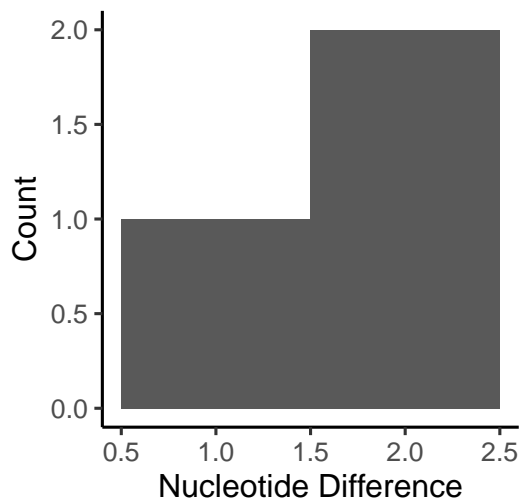
IGHV4-150*01_S0749

8 sequences assigned
No exact matches.



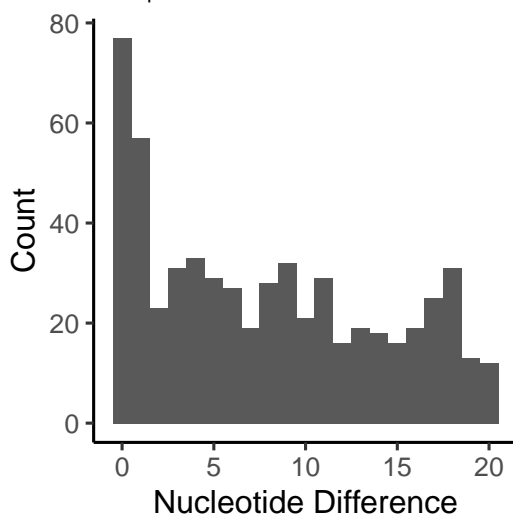
IGHV4-150*01_S4911

3 sequences assigned
No exact matches.



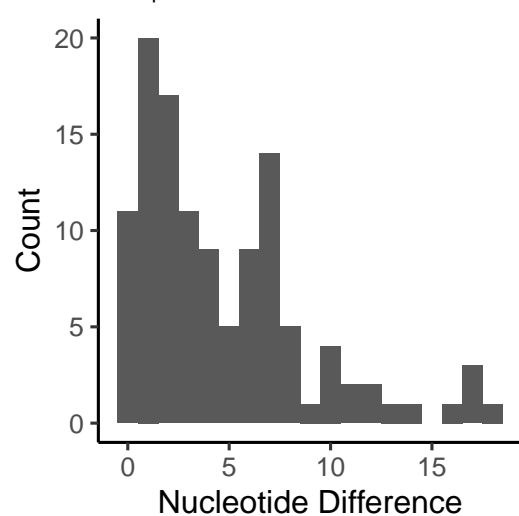
IGHV4-NL_1*01_S8520

650 sequences assigned
77 (11.8%) exact matches, in which:
69 unique CDR3
6 unique J



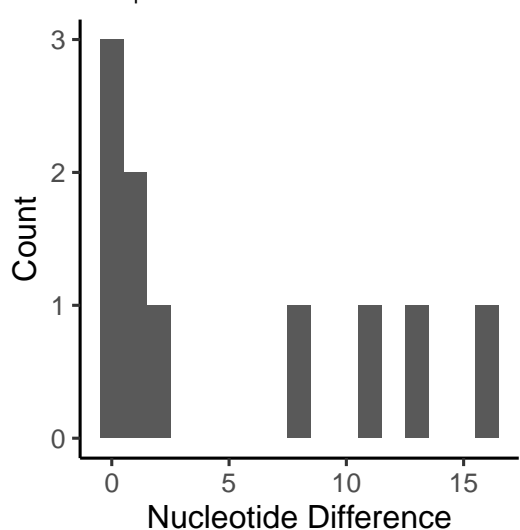
IGHV4-NL_1*02_S9550

119 sequences assigned
11 (9.2%) exact matches, in which:
8 unique CDR3
5 unique J



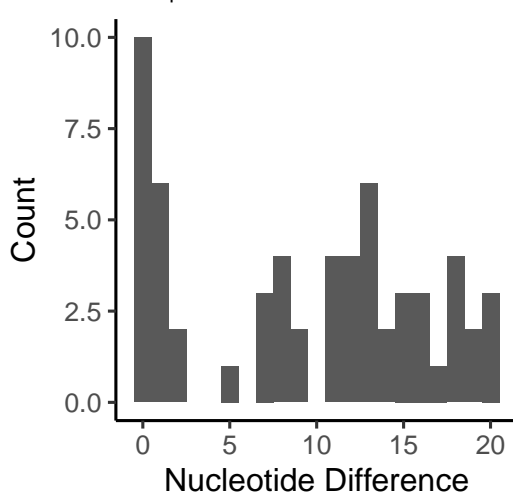
IGHV4-174*02_S7573

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



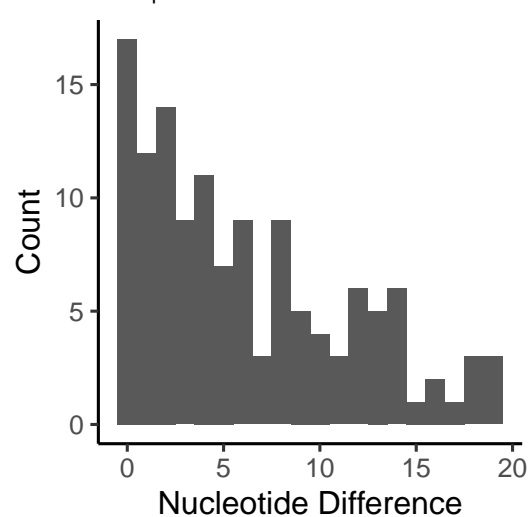
IGHV4-NL_1*02_S2201

68 sequences assigned
10 (14.7%) exact matches, in which:
7 unique CDR3
6 unique J



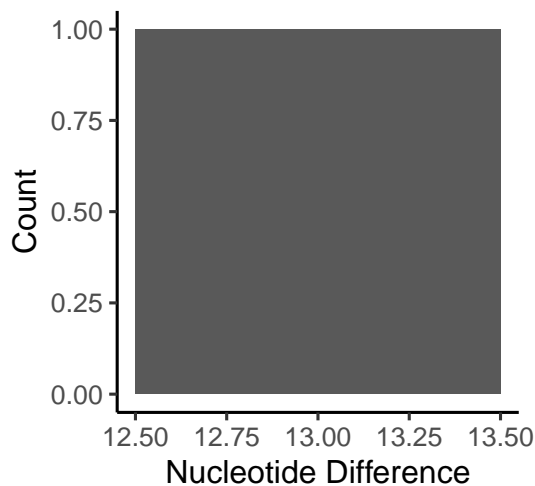
IGHV4-NL_10*01_S4164

151 sequences assigned
17 (11.3%) exact matches, in which:
15 unique CDR3
7 unique J



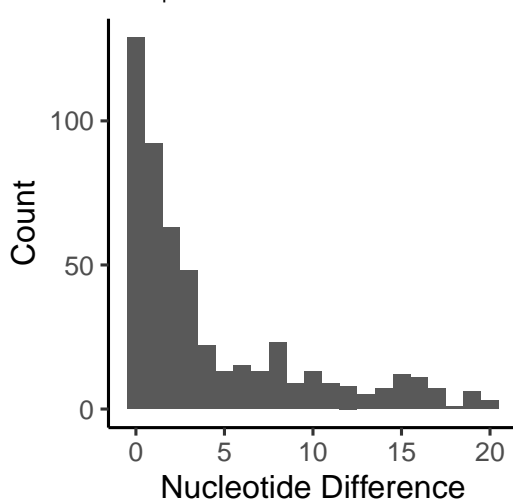
IGHV4-174*02_S9172

1 sequences assigned
No exact matches.



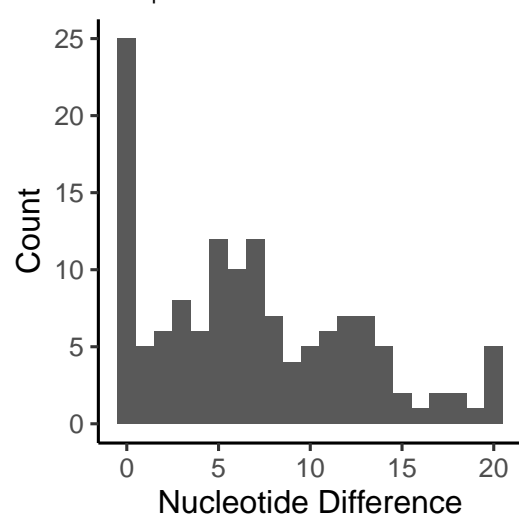
IGHV4-NL_1*02_S7536

513 sequences assigned
129 (25.1%) exact matches, in which:
118 unique CDR3
7 unique J



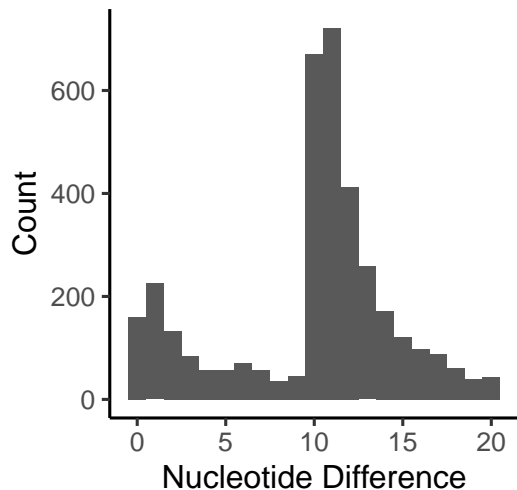
IGHV4-NL_10*01_S4164_

154 sequences assigned
25 (16.2%) exact matches, in which:
24 unique CDR3
6 unique J



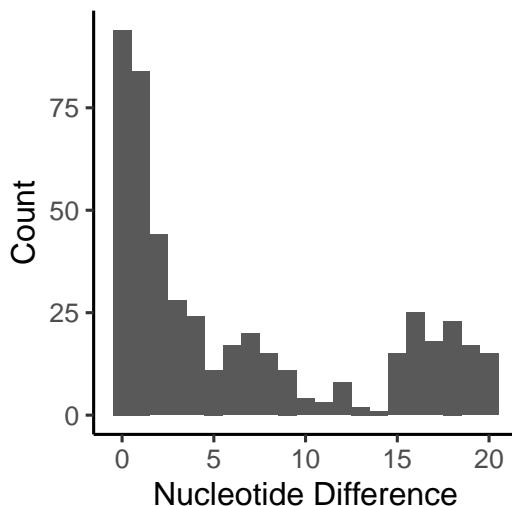
IGHV4–NL_12*01_S6471

3974 sequences assigned
160 (4%) exact matches, in which:
137 unique CDR3
8 unique J



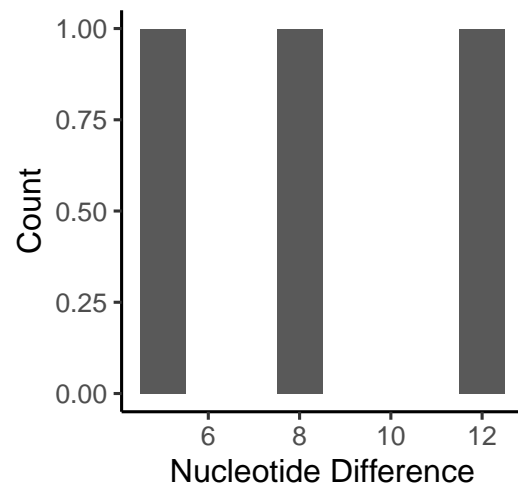
IGHV4–NL_17*01_S6933

588 sequences assigned
94 (16%) exact matches, in which:
88 unique CDR3
6 unique J



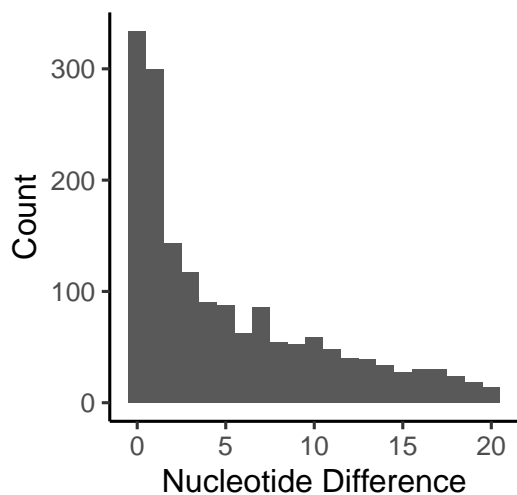
IGHV4–NL_21*01_S3442

5 sequences assigned
No exact matches.



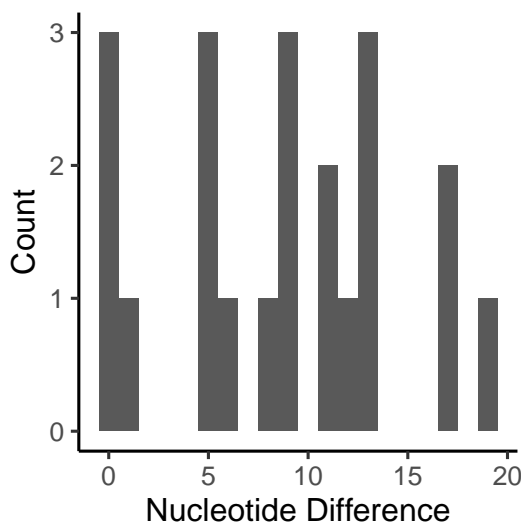
IGHV4–NL_13*01_S9273

1802 sequences assigned
334 (18.5%) exact matches, in which:
318 unique CDR3
8 unique J



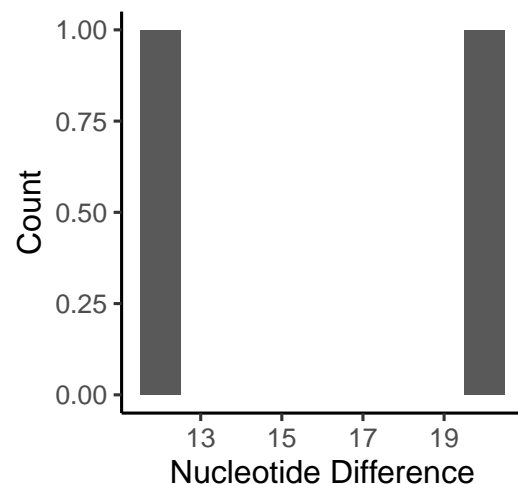
IGHV4–NL_18*01_S3907

24 sequences assigned
3 (12.5%) exact matches, in which:
3 unique CDR3
2 unique J



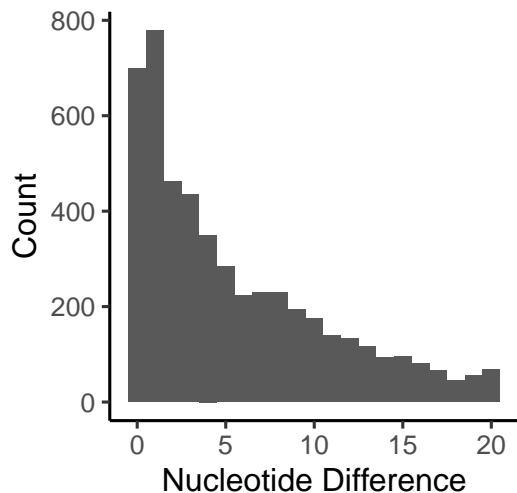
IGHV4–NL_21*01_S3940

2 sequences assigned
No exact matches.



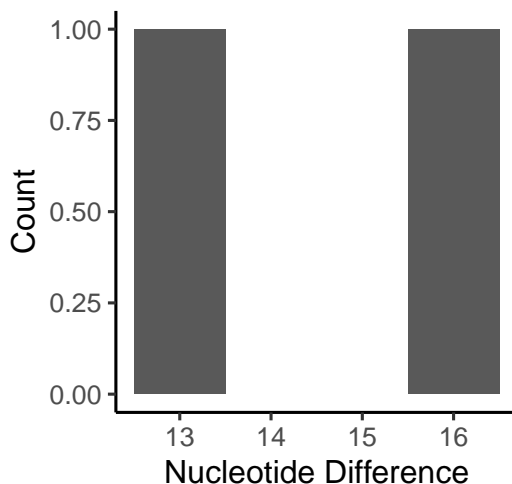
IGHV4–NL_16*01_S2138

5527 sequences assigned
698 (12.6%) exact matches, in which:
620 unique CDR3
9 unique J



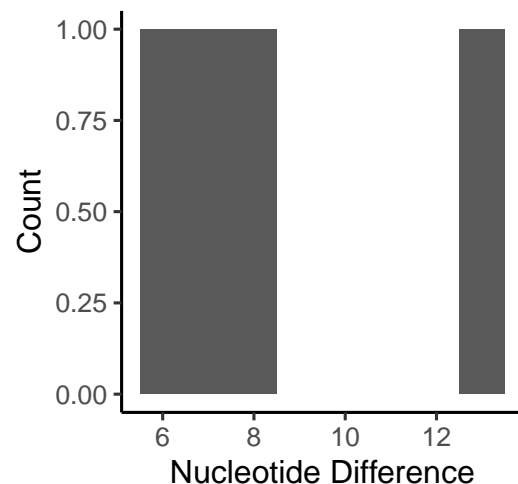
IGHV4–NL_21*01_S0138

3 sequences assigned
No exact matches.



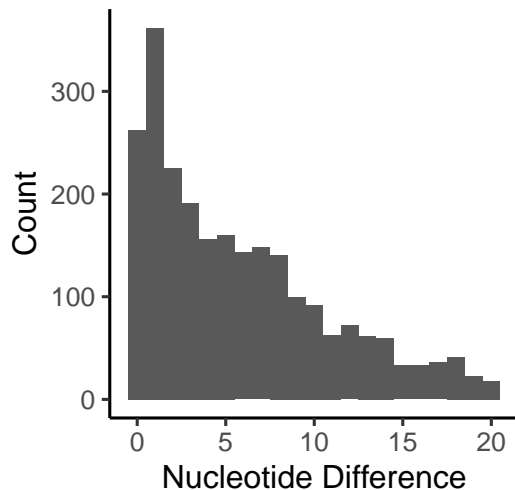
IGHV4–NL_21*01_S5257

4 sequences assigned
No exact matches.



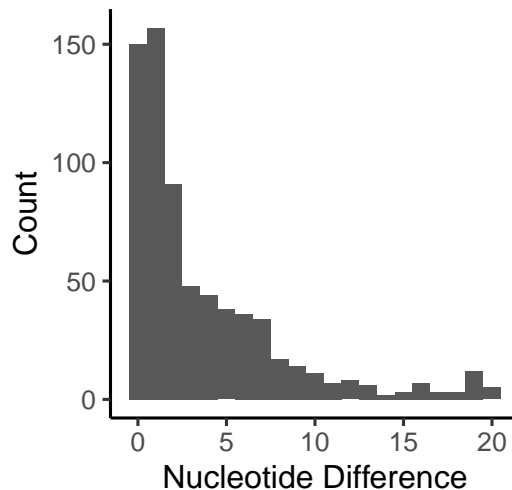
IGHV4–NL_22*01_S2393

2606 sequences assigned
262 (10.1%) exact matches, in which:
245 unique CDR3
7 unique J



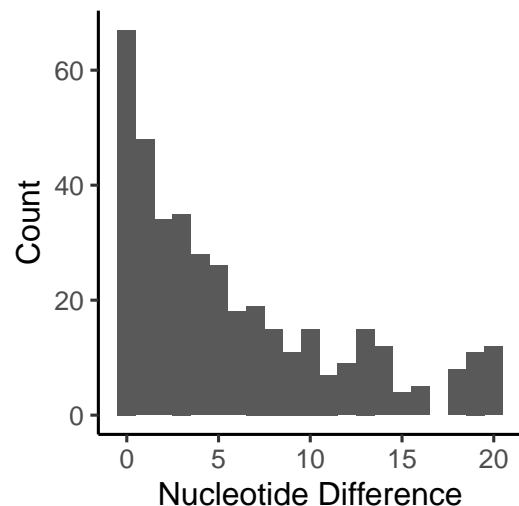
IGHV4–NL_27*01_S5720

744 sequences assigned
150 (20.2%) exact matches, in which:
141 unique CDR3
6 unique J



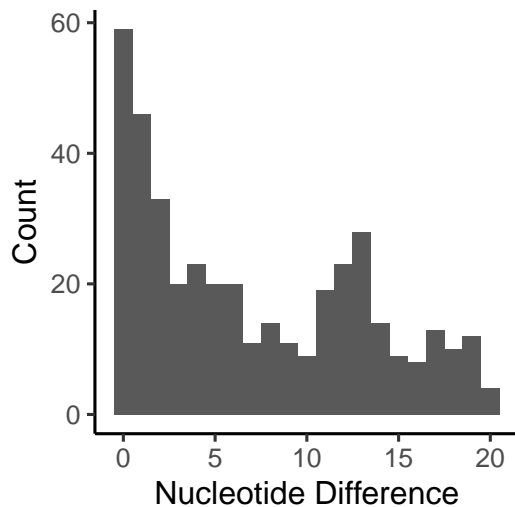
IGHV4–NL_28*01_S0629

517 sequences assigned
67 (13%) exact matches, in which:
62 unique CDR3
6 unique J



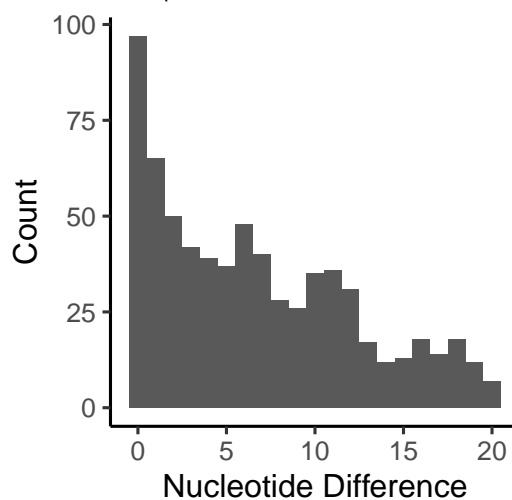
IGHV4–NL_25*01_S1514

452 sequences assigned
59 (13.1%) exact matches, in which:
53 unique CDR3
7 unique J



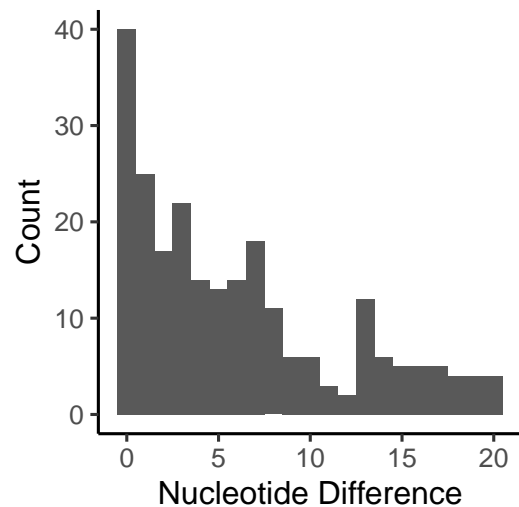
IGHV4–NL_27*01_S6960

820 sequences assigned
97 (11.8%) exact matches, in which:
85 unique CDR3
7 unique J



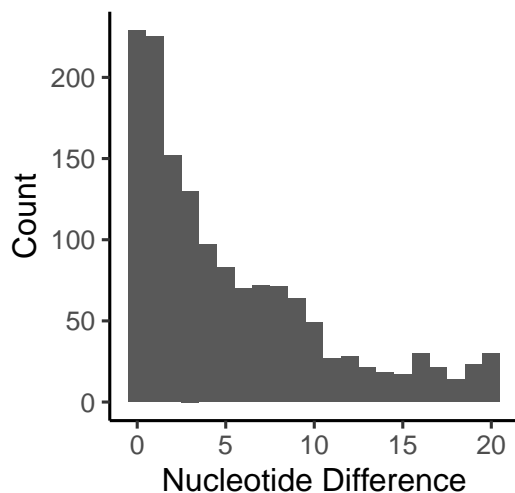
IGHV4–NL_28*01_S1005

282 sequences assigned
40 (14.2%) exact matches, in which:
38 unique CDR3
7 unique J



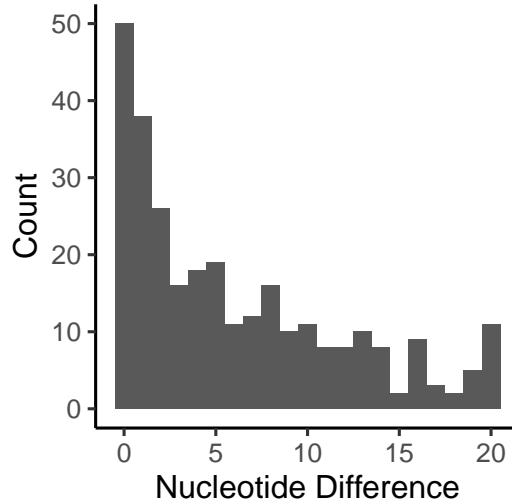
IGHV4–NL_27*01_S1515

1650 sequences assigned
229 (13.9%) exact matches, in which:
209 unique CDR3
7 unique J



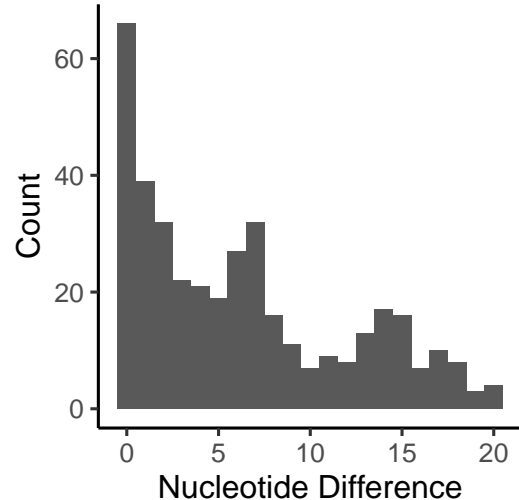
IGHV4–NL_28*01_S0629

363 sequences assigned
50 (13.8%) exact matches, in which:
41 unique CDR3
6 unique J



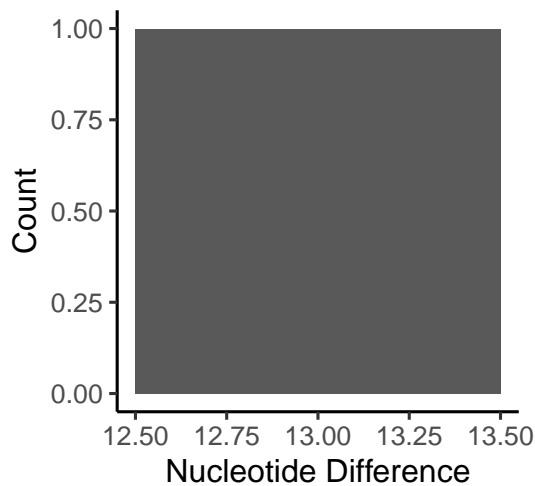
IGHV4–NL_28*01_S1005

444 sequences assigned
66 (14.9%) exact matches, in which:
59 unique CDR3
7 unique J



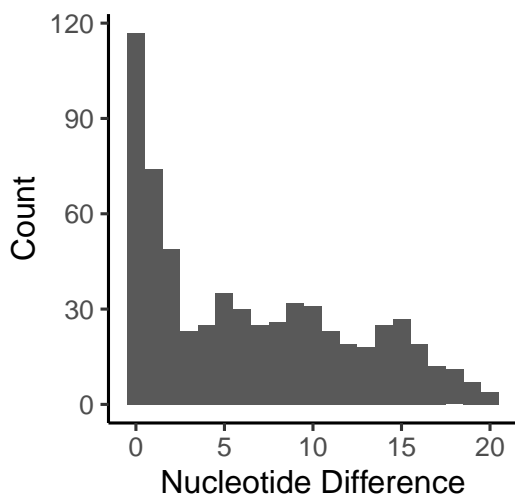
IGHV4–NL_29*01_S7498

1 sequences assigned
No exact matches.



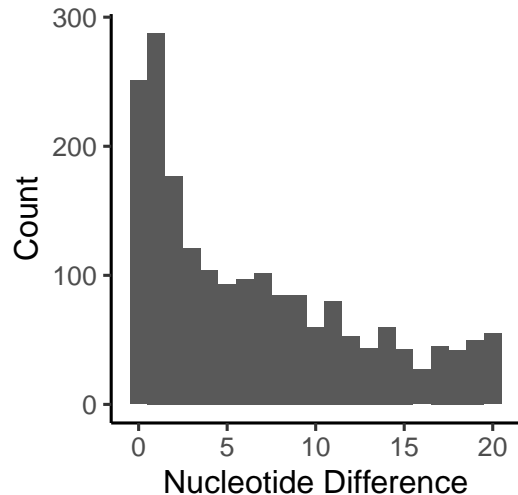
IGHV4–NL_30*01_S1240

676 sequences assigned
117 (17.3%) exact matches, in which:
108 unique CDR3
8 unique J



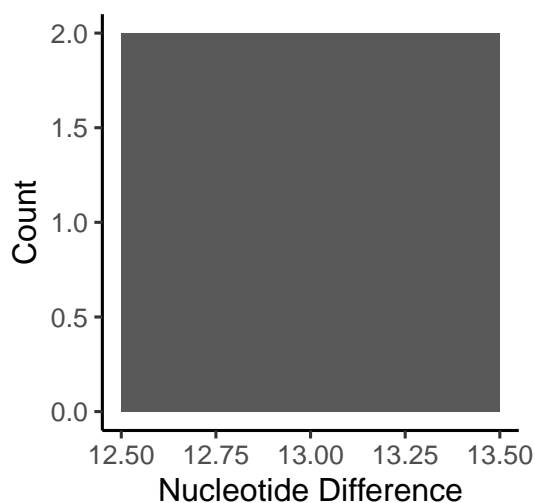
IGHV4–NL_33*01_S9199

2413 sequences assigned
251 (10.4%) exact matches, in which:
232 unique CDR3
8 unique J



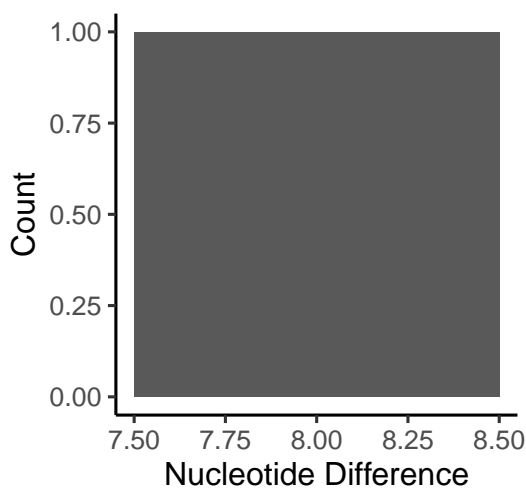
IGHV4–NL_3*01_S5200

26 sequences assigned
No exact matches.



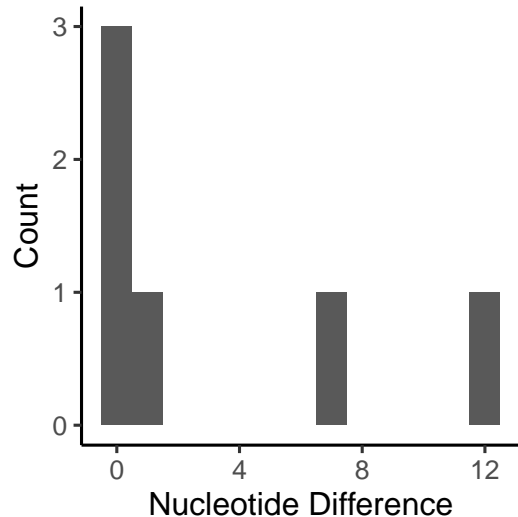
IGHV4–NL_31*01_S7693

1 sequences assigned
No exact matches.



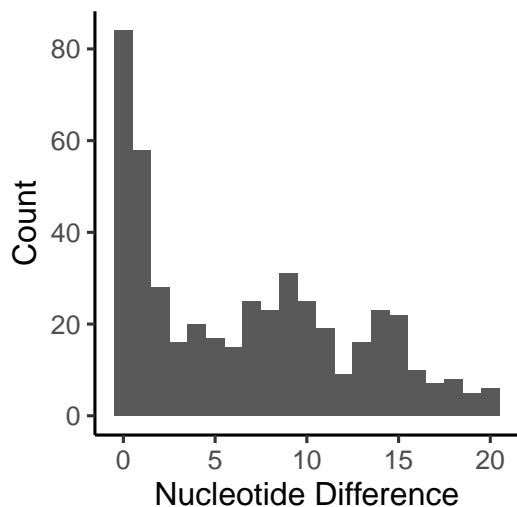
IGHV4–NL_36*01_S1694

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



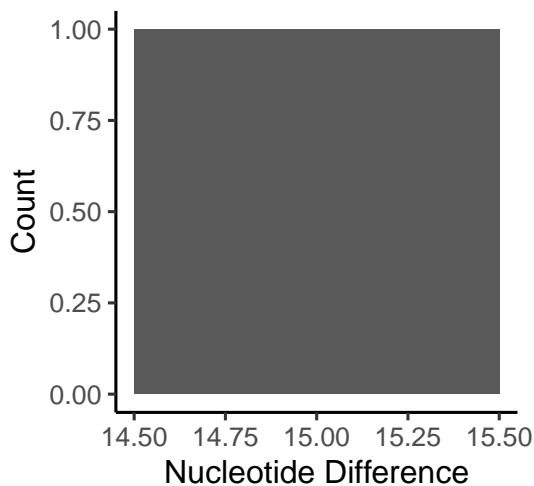
IGHV4–NL_30*01_S1240

502 sequences assigned
84 (16.7%) exact matches, in which:
74 unique CDR3
6 unique J



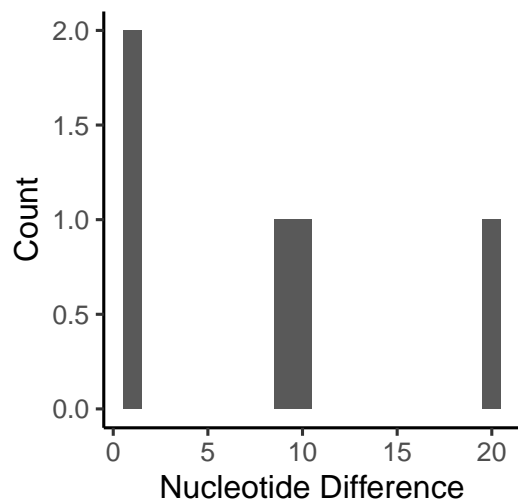
IGHV4–NL_32*01_S1450

2 sequences assigned
No exact matches.



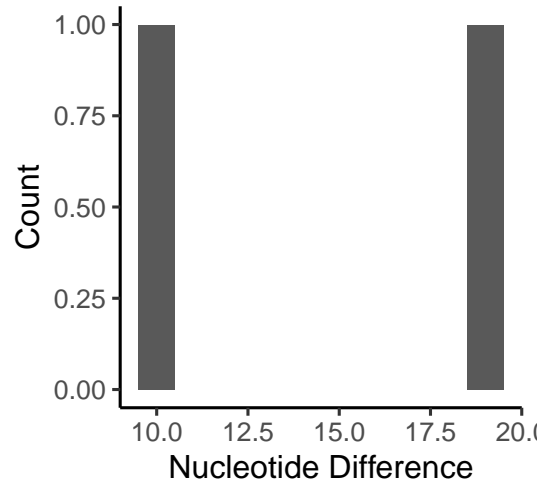
IGHV4–NL_36*01_S7581

5 sequences assigned
No exact matches.



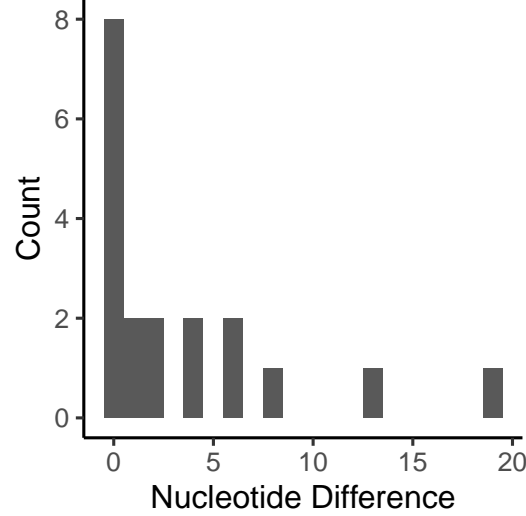
IGHV4-NL_36*01_S964

5 sequences assigned
No exact matches.



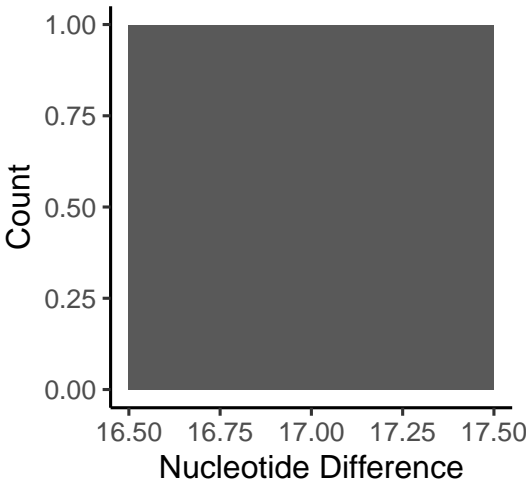
IGHV4-NL_37*01_S0997

21 sequences assigned
8 (38.1%) exact matches, in which:
8 unique CDR3
4 unique J



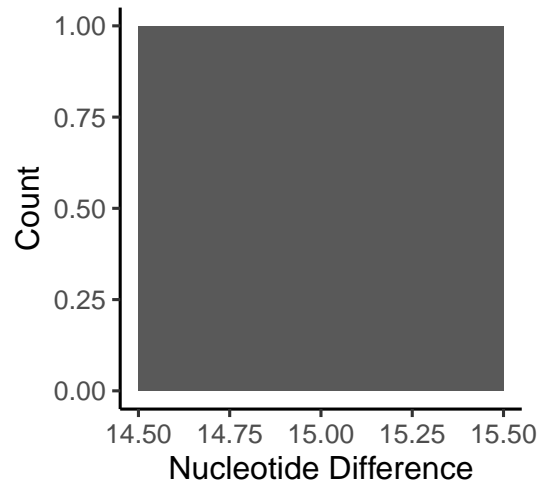
IGHV4-NL_4*01_S5211

1 sequences assigned
No exact matches.



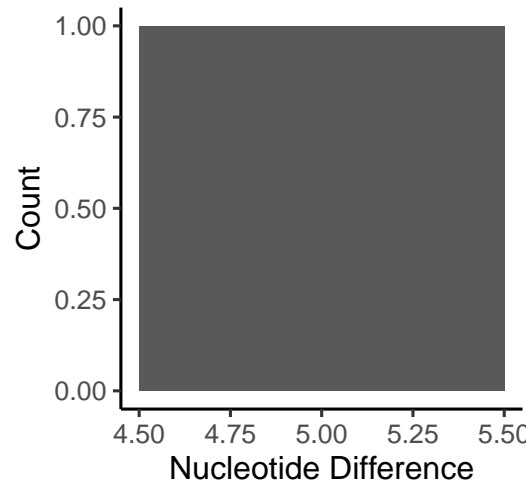
IGHV4-NL_36*01_S989

1 sequences assigned
No exact matches.



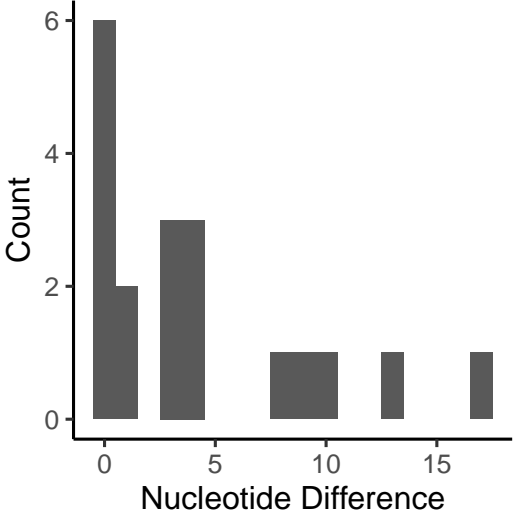
IGHV4-NL_38*01_S8437

1 sequences assigned
No exact matches.



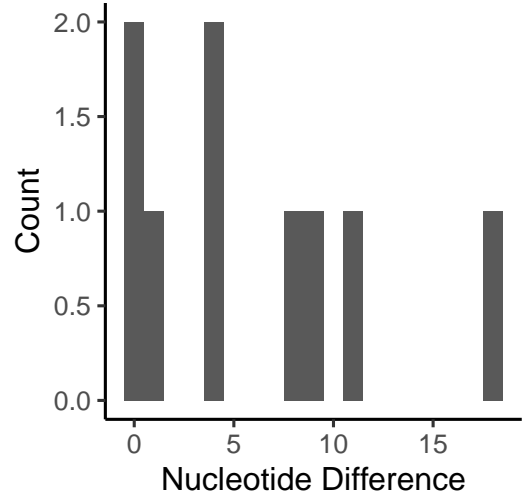
IGHV4-NL_40*01_S9020

20 sequences assigned
6 (30%) exact matches, in which:
6 unique CDR3
4 unique J



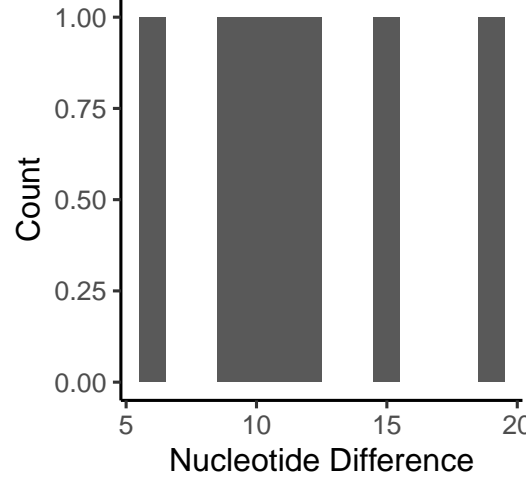
IGHV4-NL_37*01_S0071

9 sequences assigned
2 (22.2%) exact matches, in which:
2 unique CDR3
1 unique J



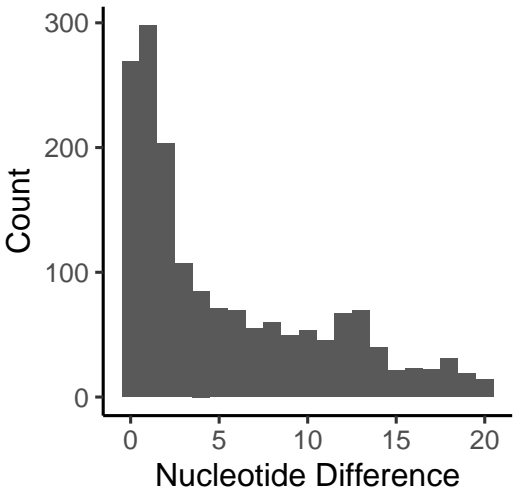
IGHV4-NL_38*01_S9225

10 sequences assigned
No exact matches.



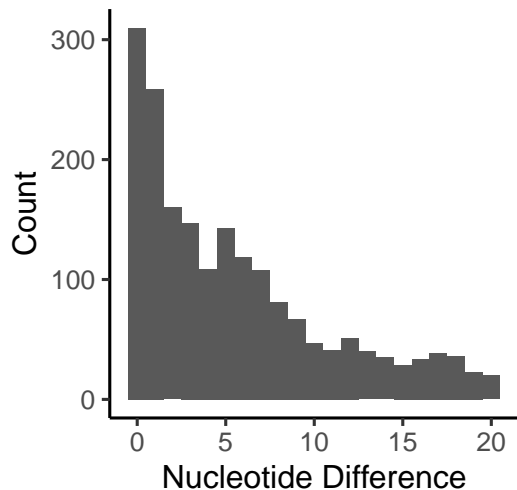
IGHV4-NL_41*01_S9253

1811 sequences assigned
269 (14.9%) exact matches, in which:
246 unique CDR3
7 unique J



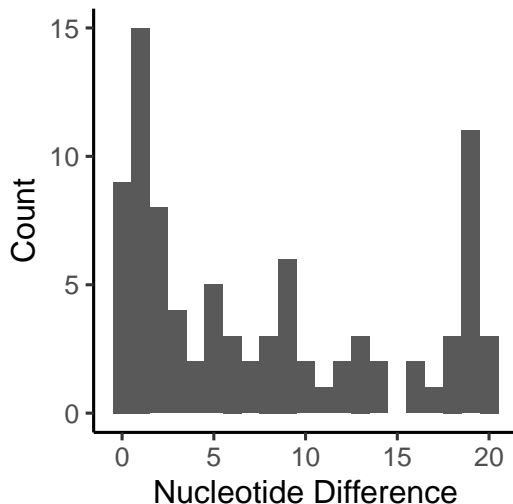
IGHV4–NL_42*01_S8550

2172 sequences assigned
310 (14.3%) exact matches, in which:
285 unique CDR3
8 unique J



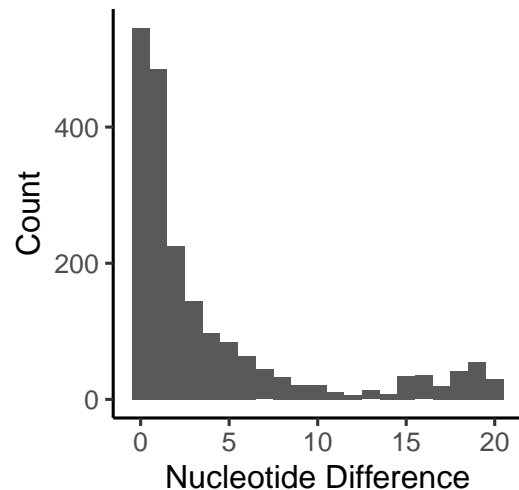
IGHV4–NL_6*01_S3002

114 sequences assigned
9 (7.9%) exact matches, in which:
8 unique CDR3
4 unique J



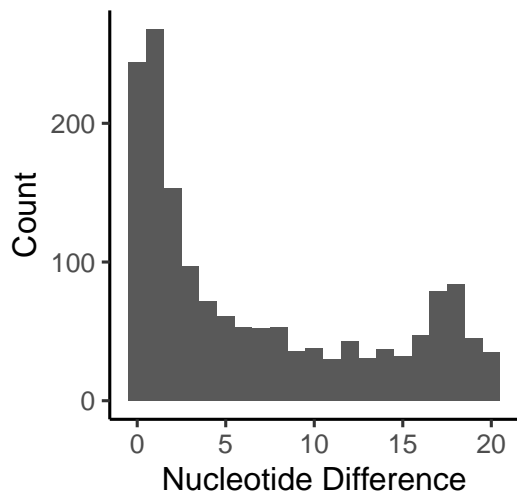
IGHV5–15*01_S8661

2120 sequences assigned
546 (25.8%) exact matches, in which:
372 unique CDR3
8 unique J



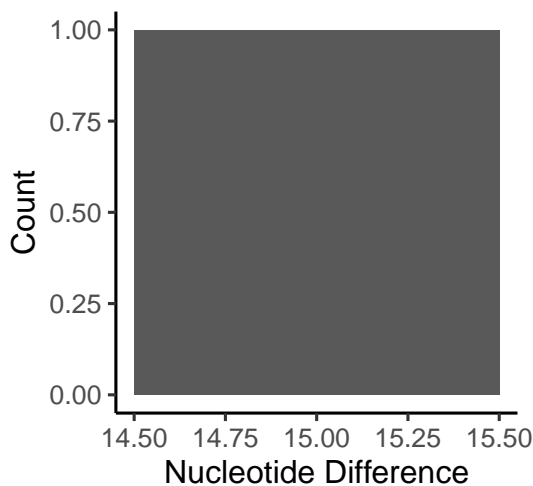
IGHV4–NL_5*01_S0908

1978 sequences assigned
244 (12.3%) exact matches, in which:
219 unique CDR3
8 unique J



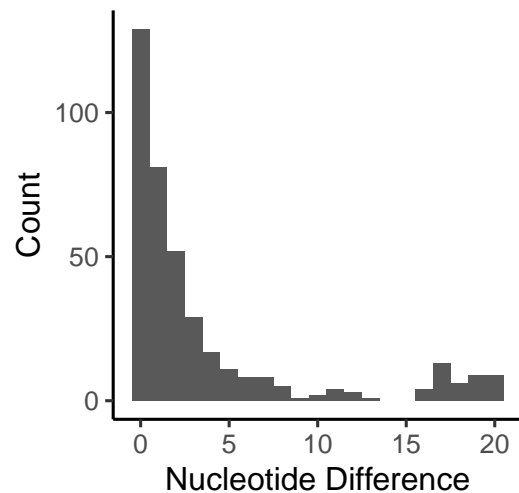
IGHV4–NL_9*02_S2874

3 sequences assigned
No exact matches.



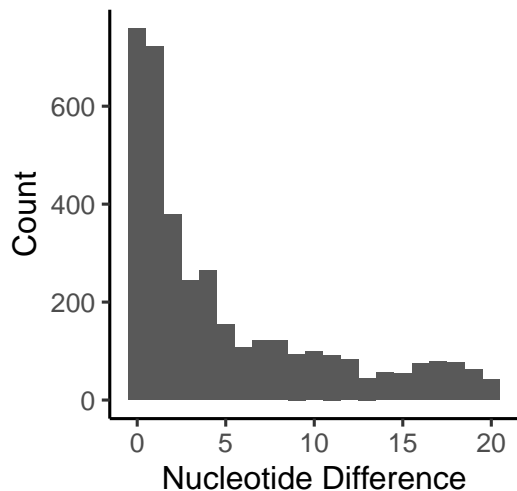
IGHV5–157*01_S4351

405 sequences assigned
129 (31.9%) exact matches, in which:
75 unique CDR3
7 unique J



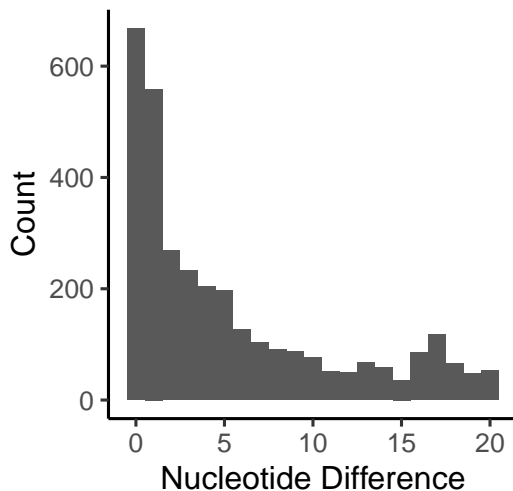
IGHV4–NL_5*01_S6960

4261 sequences assigned
759 (17.8%) exact matches, in which:
700 unique CDR3
7 unique J



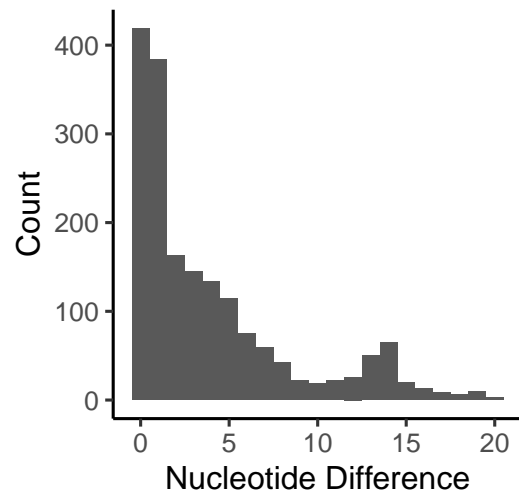
IGHV5–15*01_S0175

3400 sequences assigned
668 (19.6%) exact matches, in which:
450 unique CDR3
7 unique J



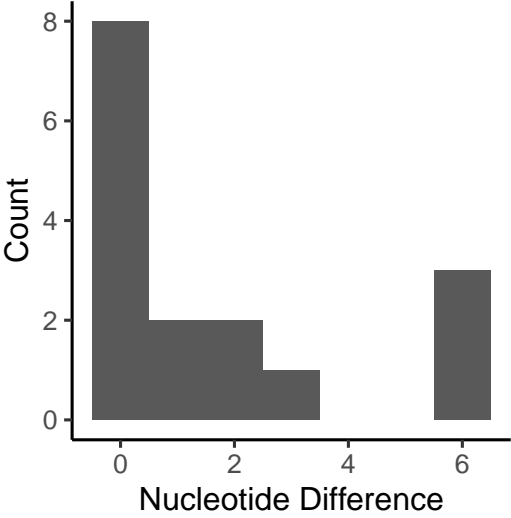
IGHV5–157*01_S8626

1816 sequences assigned
419 (23.1%) exact matches, in which:
273 unique CDR3
8 unique J



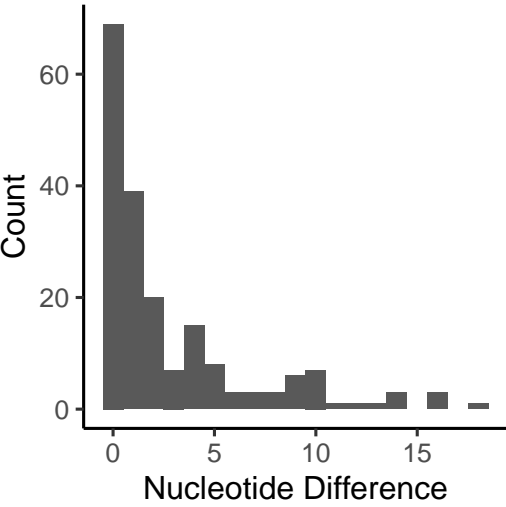
IGHV5–NL_1*02_S5699

16 sequences assigned
8 (50%) exact matches, in which:
8 unique CDR3
4 unique J



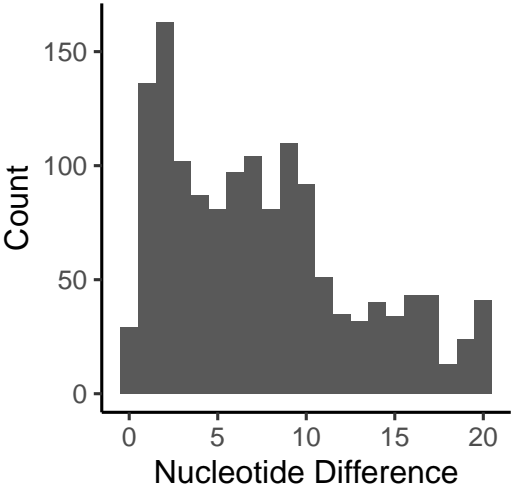
IGHV7–86*02_S1706

217 sequences assigned
69 (31.8%) exact matches, in which:
50 unique CDR3
7 unique J



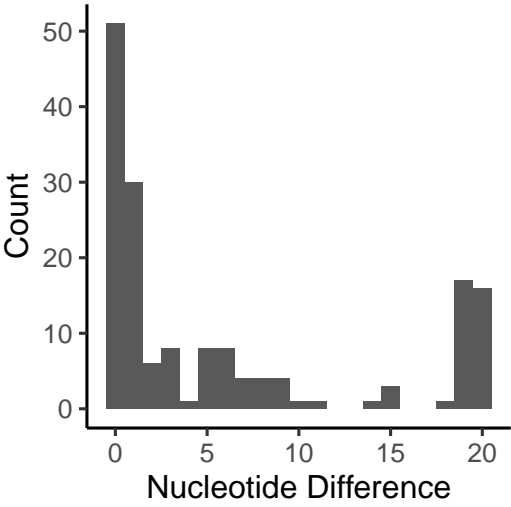
IGHV6–1*01_G283T

1524 sequences assigned
29 (1.9%) exact matches, in which:
26 unique CDR3
5 unique J

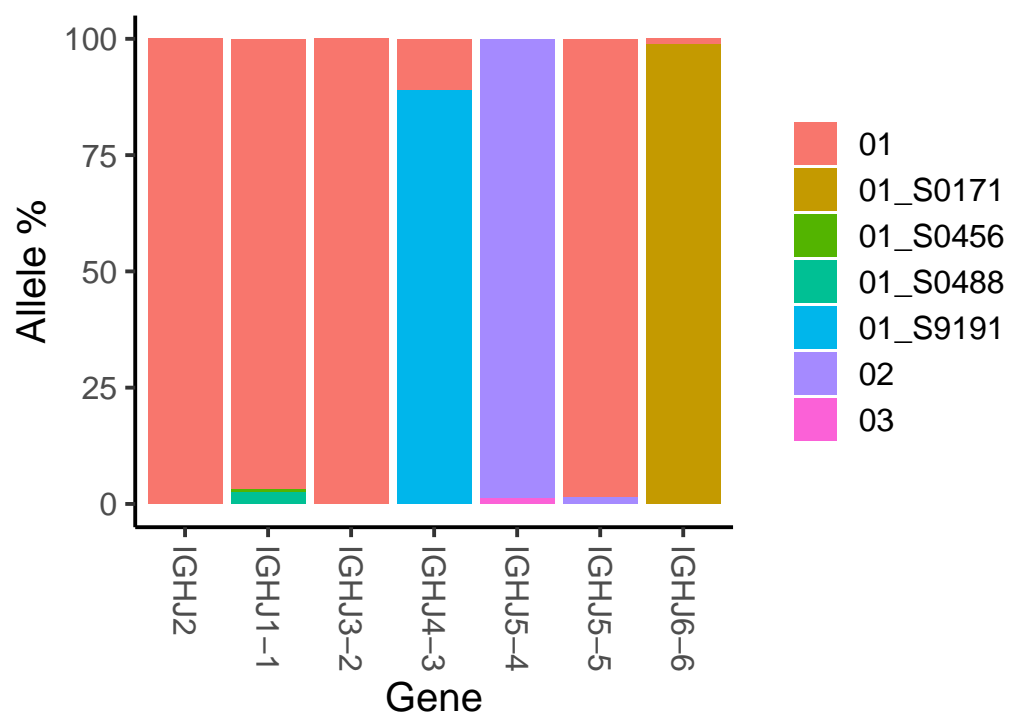


IGHV7–86*01_S5062

177 sequences assigned
51 (28.8%) exact matches, in which:
36 unique CDR3
6 unique J



Allele Usage



Warning: sequence(s) for allele(s)IGHV3-50*01_43 can't be found in the reference set or the novel alleles file.

Warning – no inferred sequences found.