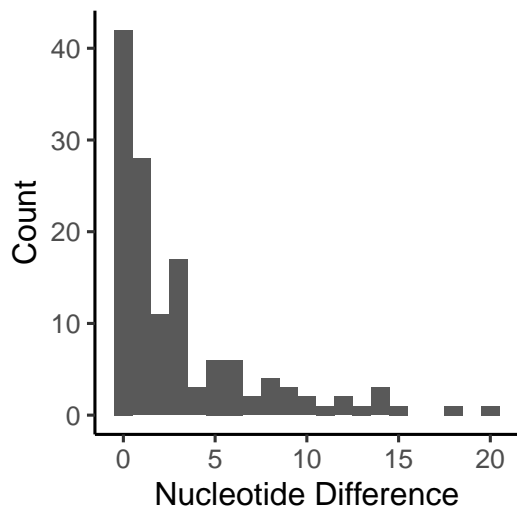


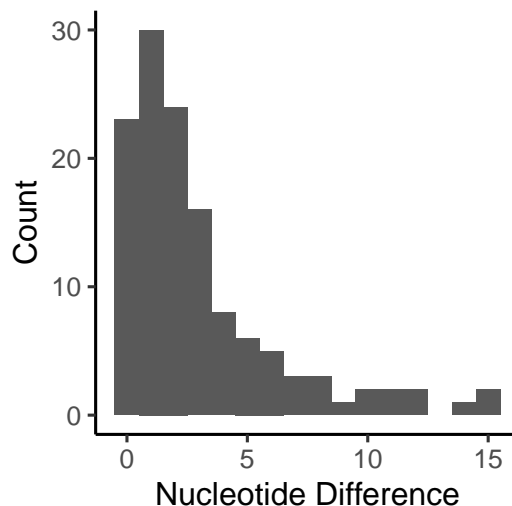
### IGHV1-84\*01\_S0302

134 sequences assigned  
42 (31.3%) exact matches, in which:  
21 unique CDR3  
5 unique J



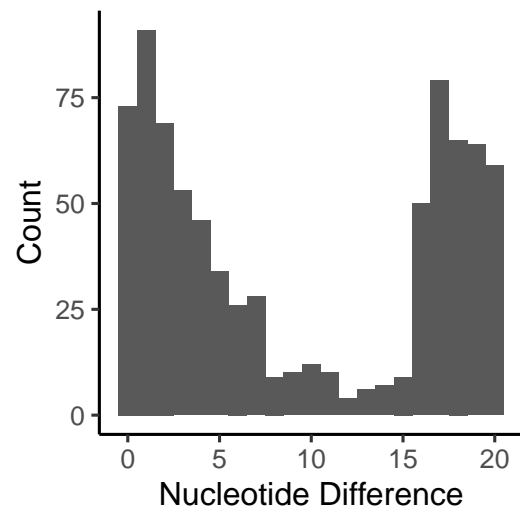
### IGHV1-138\*01\_S2054

128 sequences assigned  
23 (18%) exact matches, in which:  
21 unique CDR3  
7 unique J



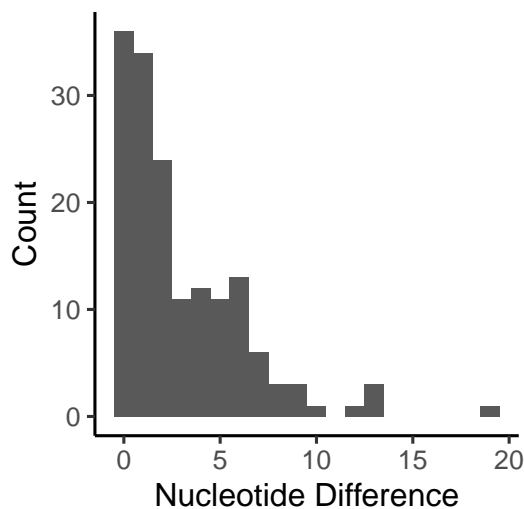
### IGHV1-NL\_1\*01\_S2052

1213 sequences assigned  
73 (6%) exact matches, in which:  
52 unique CDR3  
7 unique J



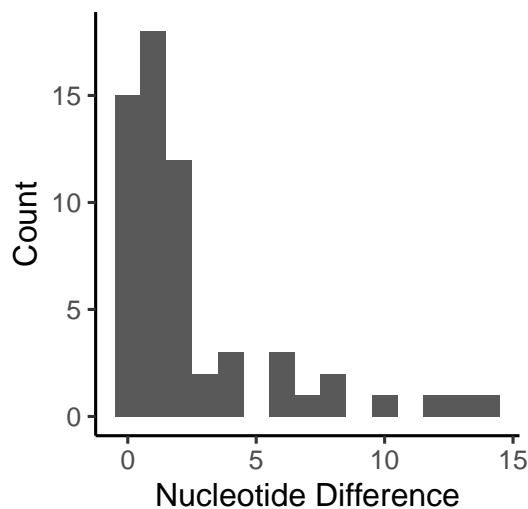
### IGHV1-84\*01\_S5842

160 sequences assigned  
36 (22.5%) exact matches, in which:  
21 unique CDR3  
4 unique J



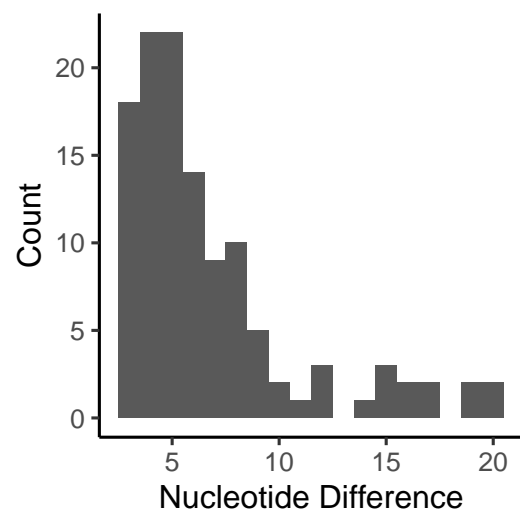
### IGHV1-138\*01\_S9115

61 sequences assigned  
15 (24.6%) exact matches, in which:  
12 unique CDR3  
4 unique J



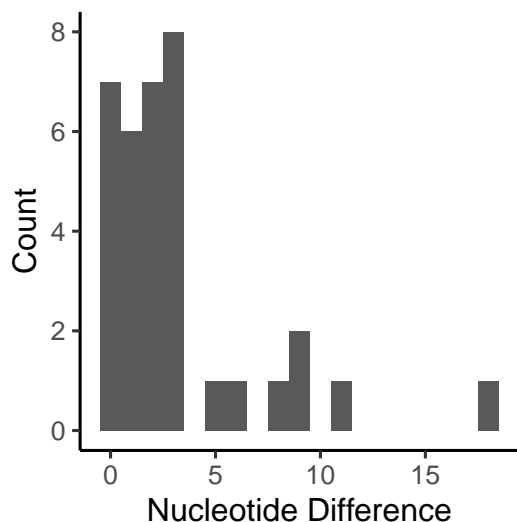
### IGHV1-NL\_1\*01\_S8523

226 sequences assigned  
No exact matches.



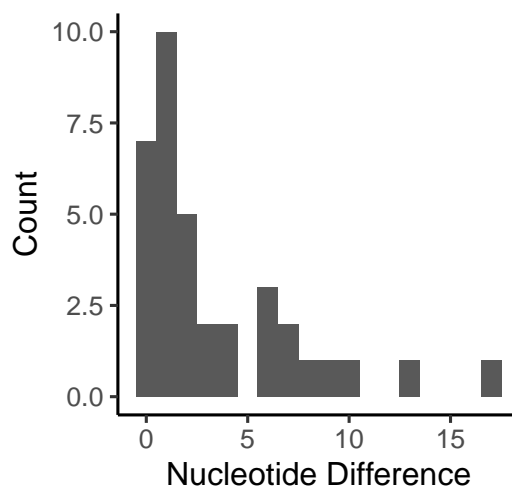
### IGHV1-124\*01\_S1765

35 sequences assigned  
7 (20%) exact matches, in which:  
4 unique CDR3  
4 unique J



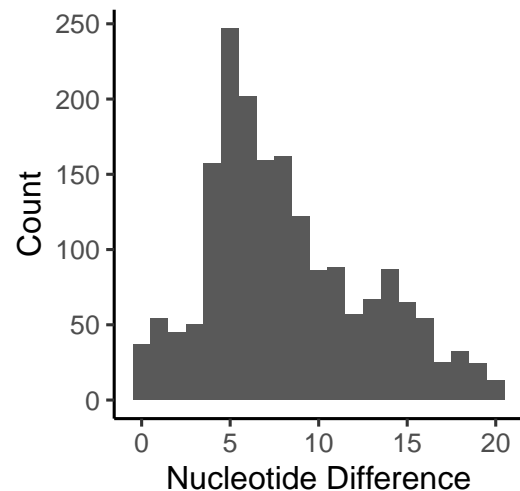
### IGHV1-170\*01\_S3055

36 sequences assigned  
7 (19.4%) exact matches, in which:  
4 unique CDR3  
2 unique J



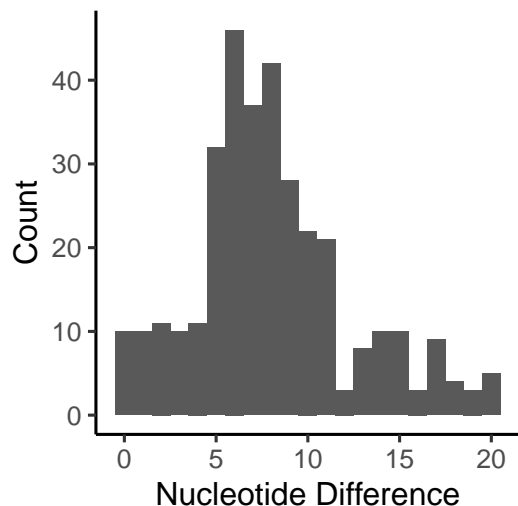
### IGHV2-7\*02\_S1732

1879 sequences assigned  
37 (2%) exact matches, in which:  
21 unique CDR3  
5 unique J



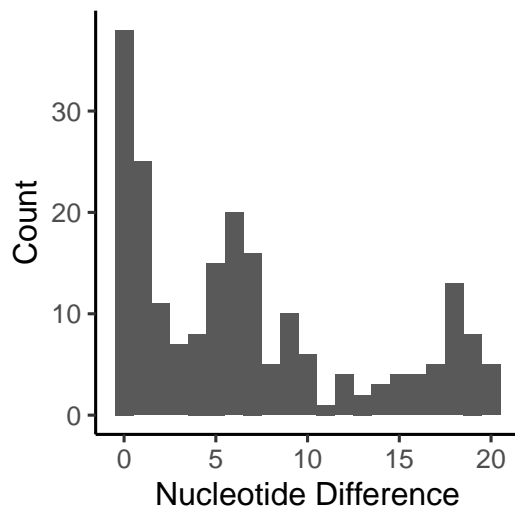
## IGHV2-7\*02\_S4285

345 sequences assigned  
10 (2.9%) exact matches, in which:  
6 unique CDR3  
2 unique J



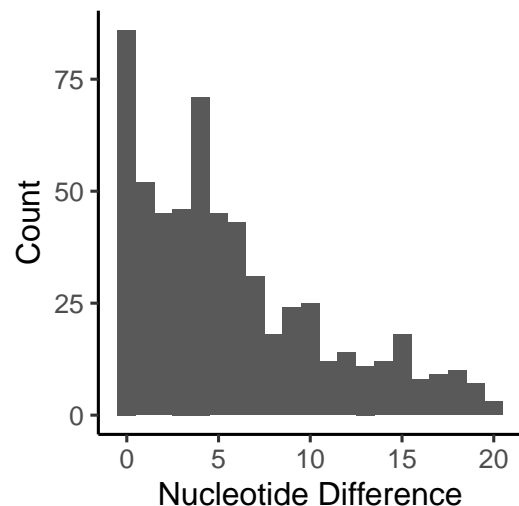
## IGHV2-69\*02\_A239C\_A2!

276 sequences assigned  
38 (13.8%) exact matches, in which:  
34 unique CDR3  
6 unique J



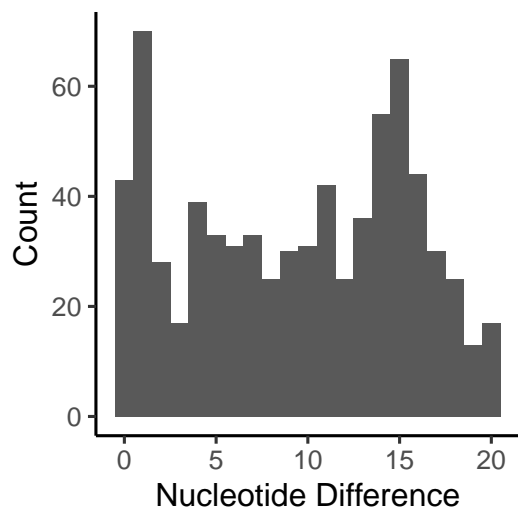
## IGHV2-173\*01\_C88A\_G1

599 sequences assigned  
86 (14.4%) exact matches, in which:  
73 unique CDR3  
7 unique J



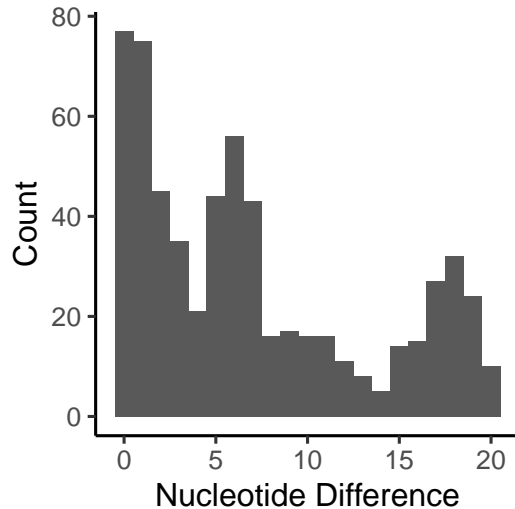
## IGHV2-69\*01\_S5121

804 sequences assigned  
43 (5.3%) exact matches, in which:  
28 unique CDR3  
4 unique J



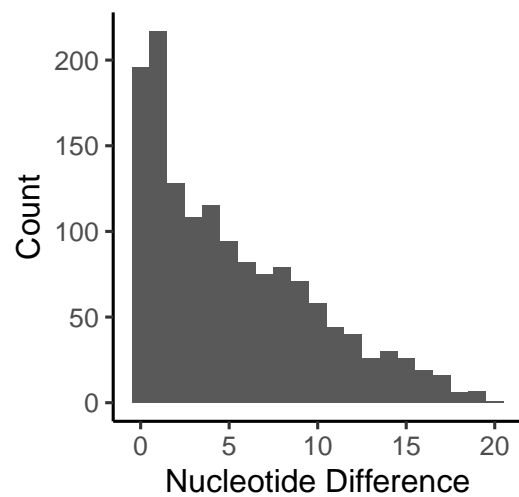
## IGHV2-69\*02\_S8202

809 sequences assigned  
77 (9.5%) exact matches, in which:  
48 unique CDR3  
7 unique J



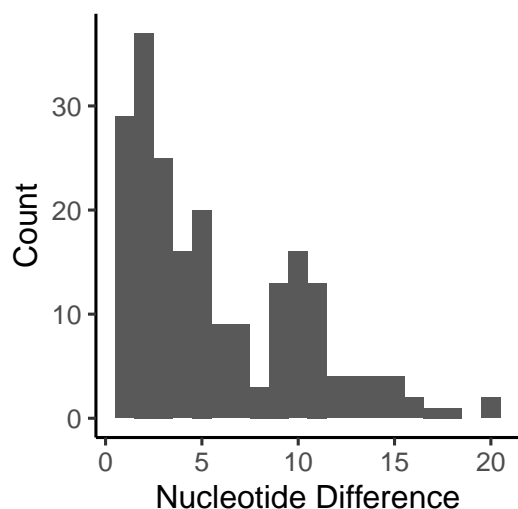
## IGHV2-173\*01\_S9930

1462 sequences assigned  
196 (13.4%) exact matches, in which:  
123 unique CDR3  
7 unique J



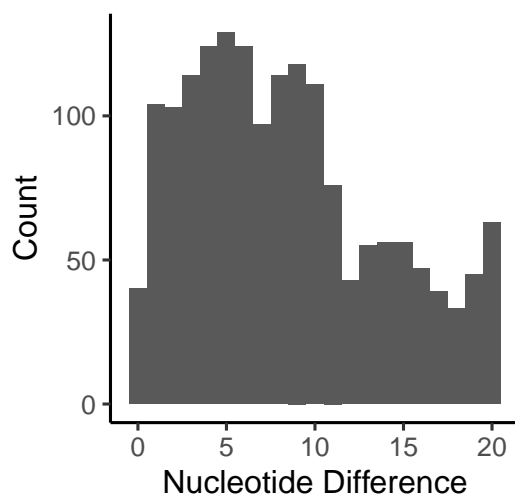
## IGHV2-69\*01\_S6153

571 sequences assigned  
No exact matches.



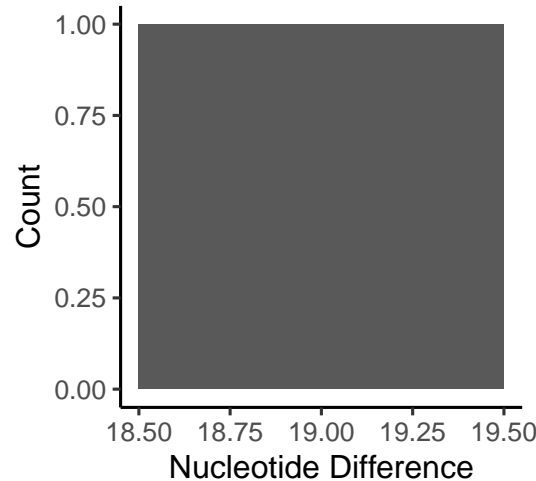
## IGHV2-118\*01\_S6364

3931 sequences assigned  
40 (1%) exact matches, in which:  
28 unique CDR3  
5 unique J



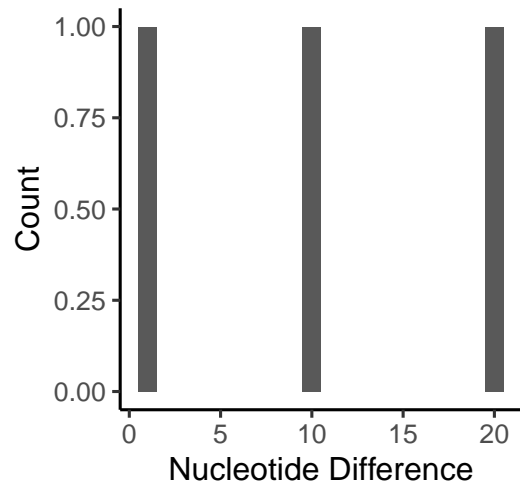
## IGHV2-NL\_1\*01\_S2133

219 sequences assigned  
No exact matches.



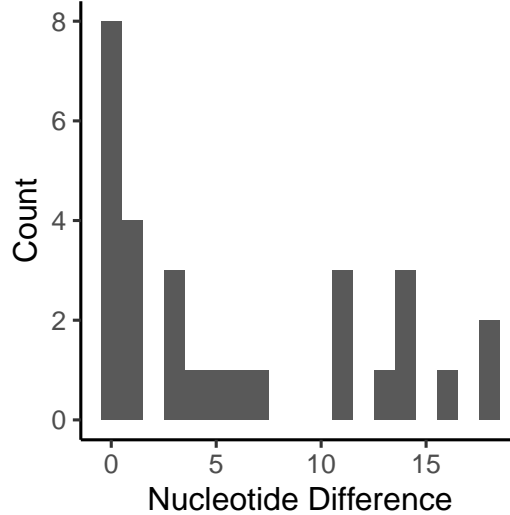
### IGHV2-NL\_1\*01\_S9725

3 sequences assigned  
No exact matches.



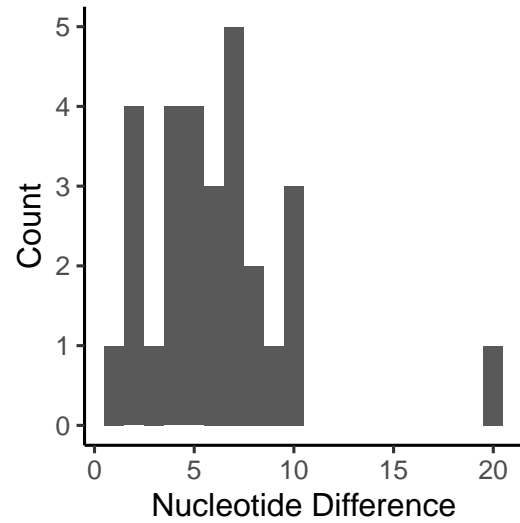
### IGHV3-28\*01\_S0096

45 sequences assigned  
8 (17.8%) exact matches, in which:  
5 unique CDR3  
4 unique J



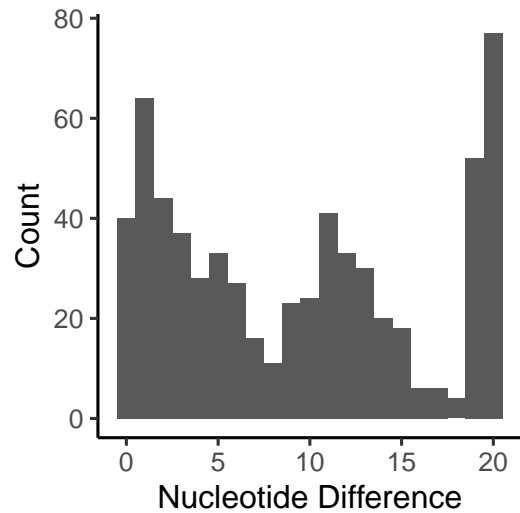
### IGHV3-36\*01\_S6650

29 sequences assigned  
No exact matches.



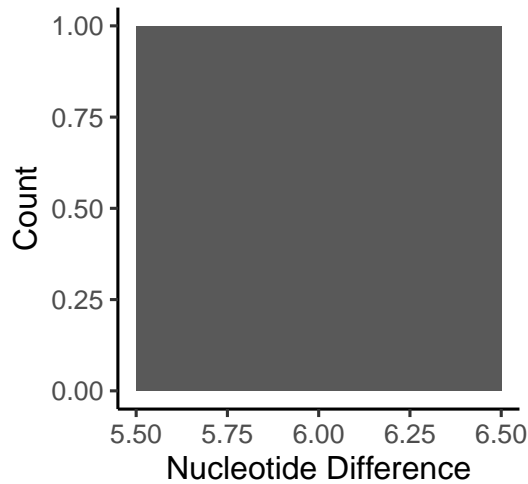
### IGHV2-NL\_2\*01\_S2193

858 sequences assigned  
40 (4.7%) exact matches, in which:  
25 unique CDR3  
5 unique J



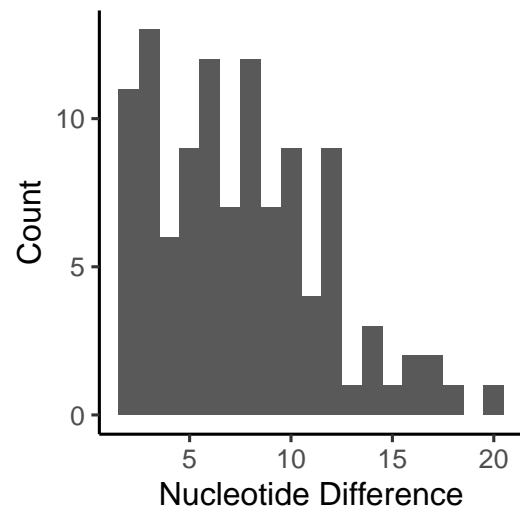
### IGHV3-34\*01\_S1309

1 sequences assigned  
No exact matches.



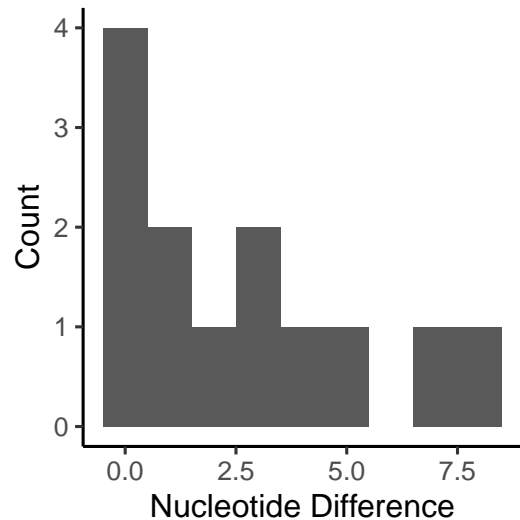
### IGHV3-37\*01\_S4420

111 sequences assigned  
No exact matches.



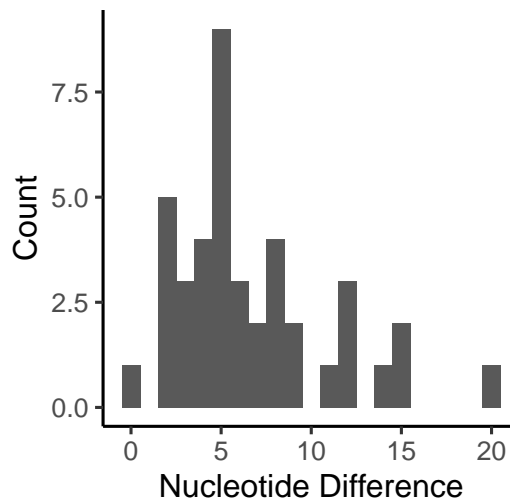
### IGHV3-5\*01\_S0388

23 sequences assigned  
4 (17.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



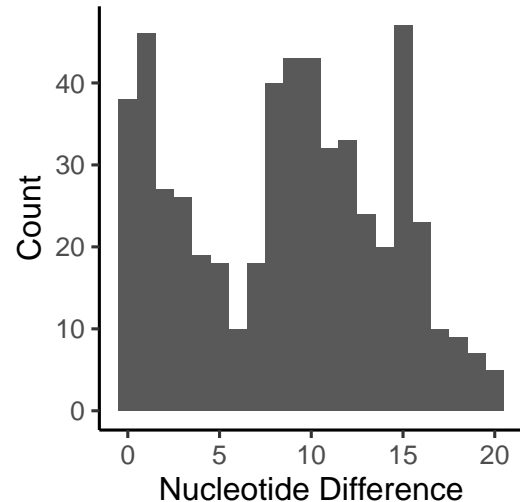
### IGHV3-36\*01\_S5206

42 sequences assigned  
1 (2.4%) exact matches, in which:  
1 unique CDR3  
1 unique J



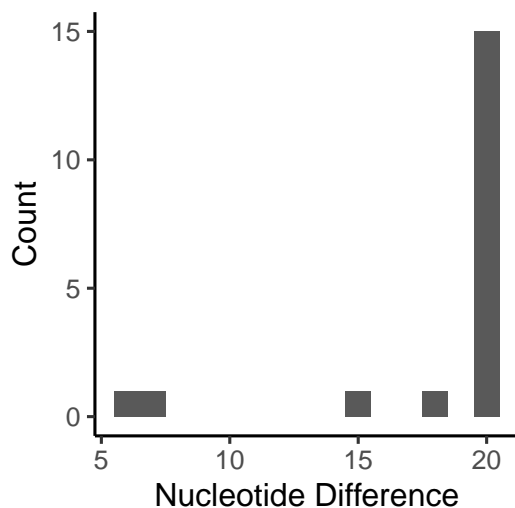
### IGHV3-37\*01\_S6325

624 sequences assigned  
38 (6.1%) exact matches, in which:  
26 unique CDR3  
4 unique J



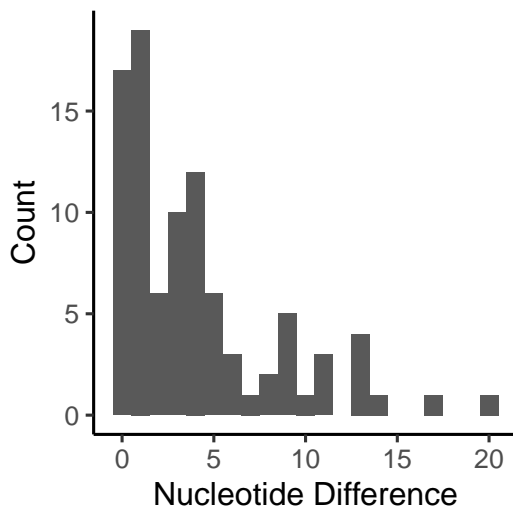
### IGHV3-37\*01\_S6630

219 sequences assigned  
No exact matches.



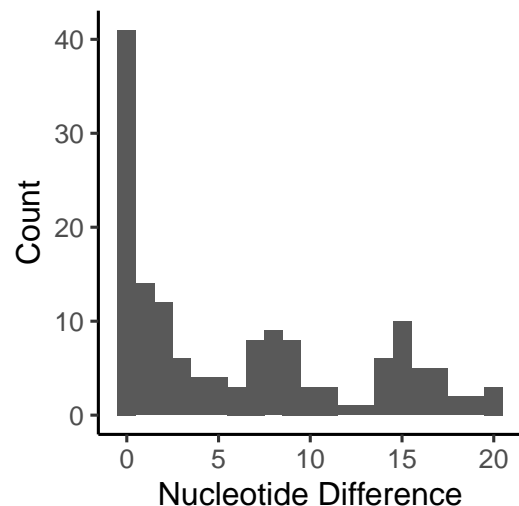
### IGHV3-52\*02\_S5117

92 sequences assigned  
17 (18.5%) exact matches, in which:  
8 unique CDR3  
3 unique J



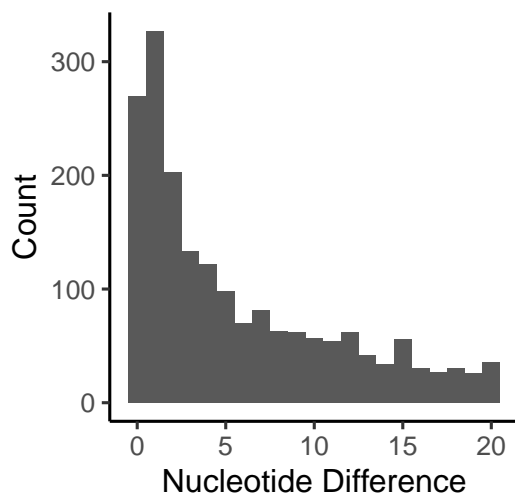
### IGHV3-73\*01\_S3636

158 sequences assigned  
41 (25.9%) exact matches, in which:  
30 unique CDR3  
7 unique J



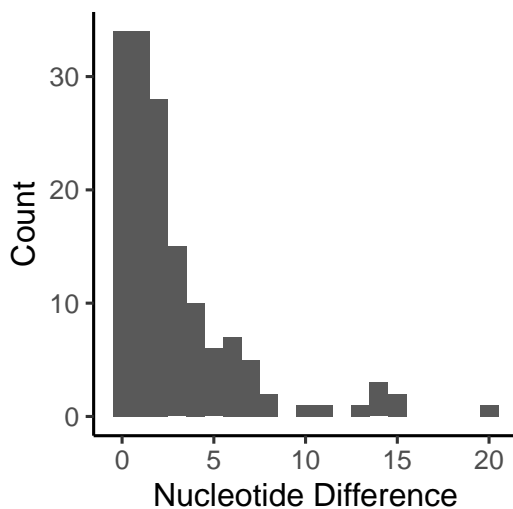
### IGHV3-50\*01\_S6687

2192 sequences assigned  
270 (12.3%) exact matches, in which:  
187 unique CDR3  
8 unique J



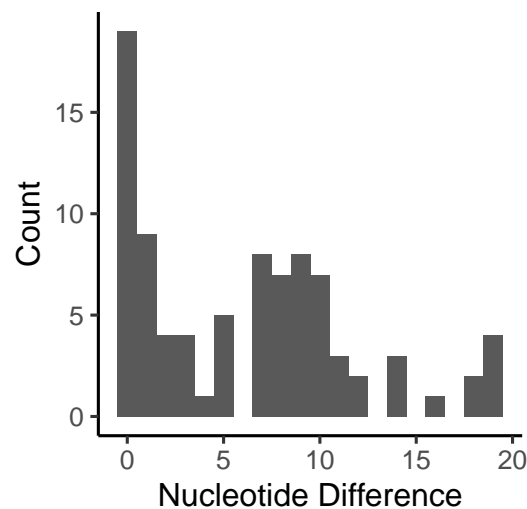
### IGHV3-53\*01\_S1252

165 sequences assigned  
34 (20.6%) exact matches, in which:  
21 unique CDR3  
4 unique J



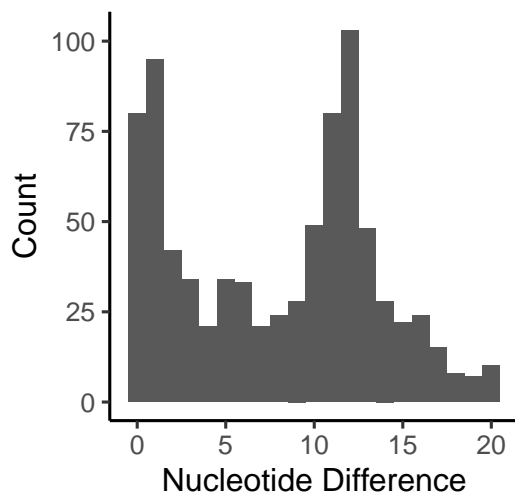
### IGHV3-73\*02\_S5005

104 sequences assigned  
19 (18.3%) exact matches, in which:  
15 unique CDR3  
4 unique J



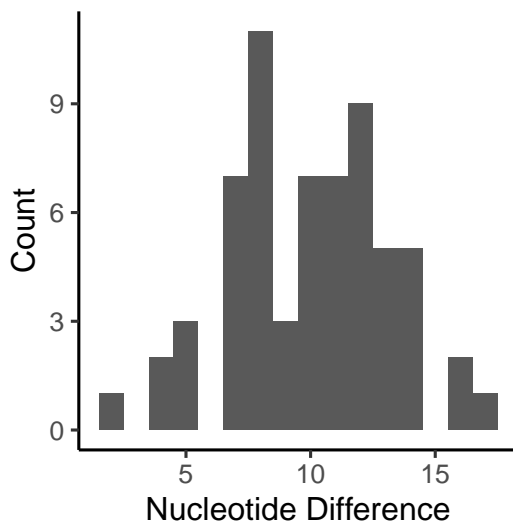
### IGHV3-50\*01\_S9079

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



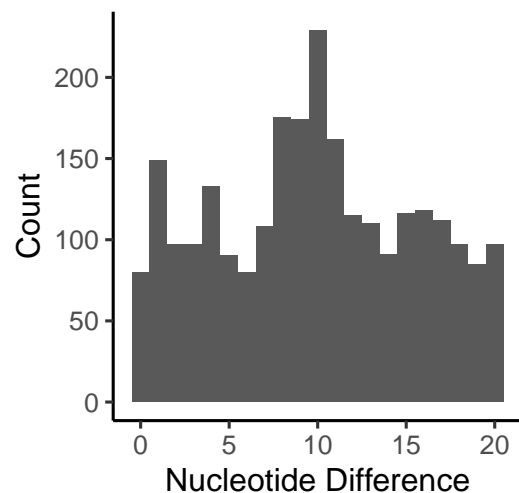
### IGHV3-53\*01\_S3647

70 sequences assigned  
No exact matches.



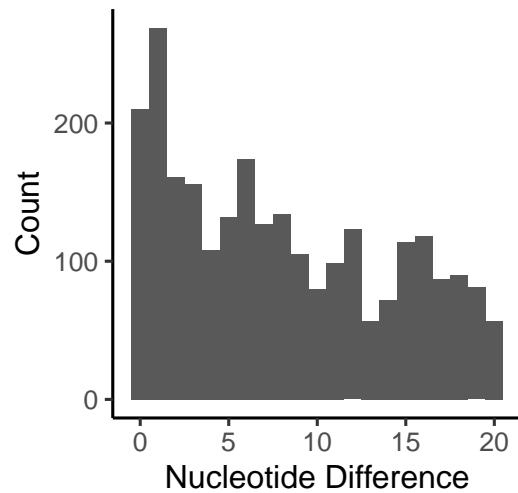
### IGHV3-76\*01\_S4285

3233 sequences assigned  
80 (2.5%) exact matches, in which:  
56 unique CDR3  
6 unique J



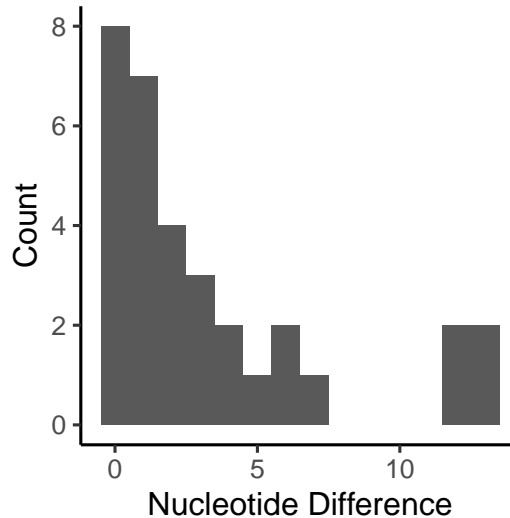
### IGHV3-76\*02\_S4190

4052 sequences assigned  
210 (5.2%) exact matches, in which:  
119 unique CDR3  
7 unique J



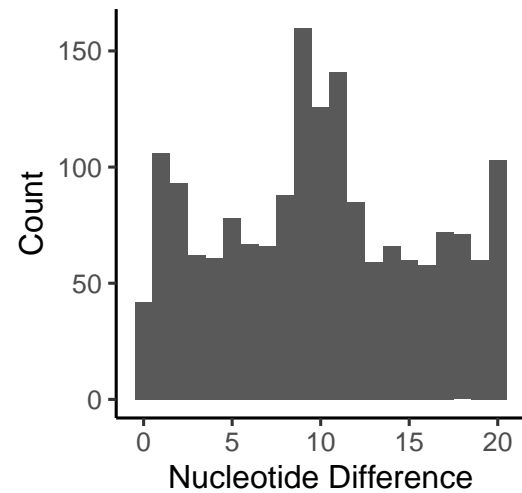
### IGHV3-83\*02\_S9518

36 sequences assigned  
8 (22.2%) exact matches, in which:  
7 unique CDR3  
4 unique J



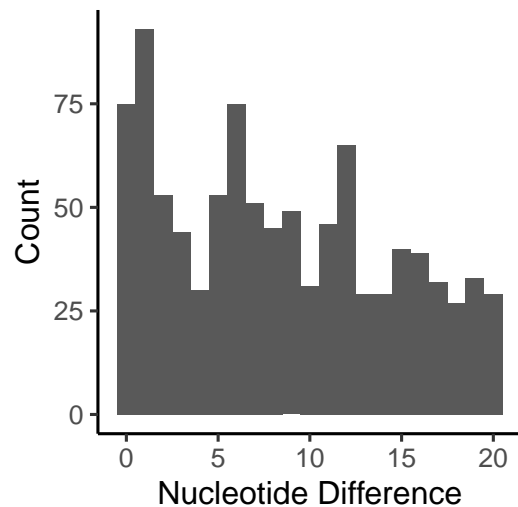
### IGHV3-88\*02\_S1355

2439 sequences assigned  
42 (1.7%) exact matches, in which:  
27 unique CDR3  
4 unique J



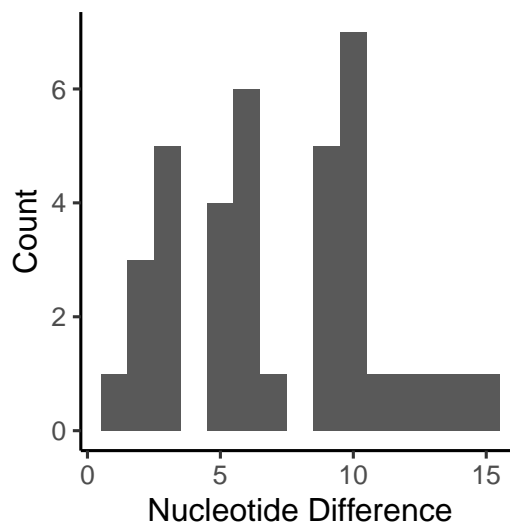
### IGHV3-76\*02\_S4190\_A29

1573 sequences assigned  
75 (4.8%) exact matches, in which:  
59 unique CDR3  
6 unique J



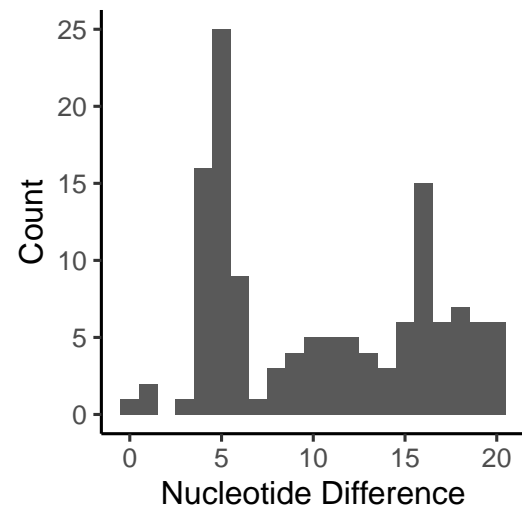
### IGHV3-87\*01\_S6311

38 sequences assigned  
No exact matches.



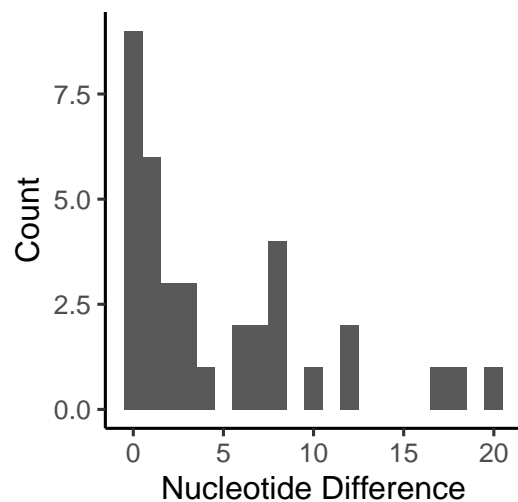
### IGHV3-100\*01\_S4205

144 sequences assigned  
1 (0.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



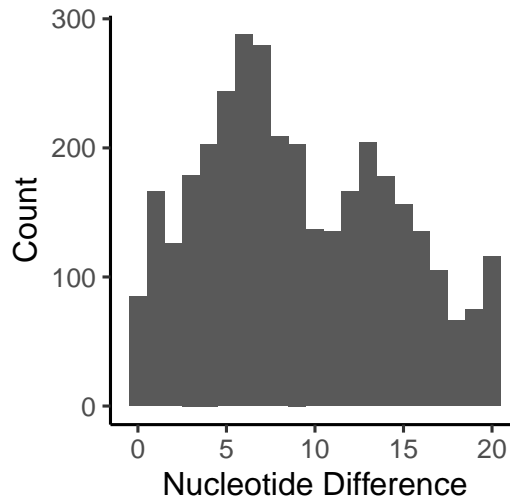
### IGHV3-83\*01\_S5932

37 sequences assigned  
9 (24.3%) exact matches, in which:  
7 unique CDR3  
4 unique J



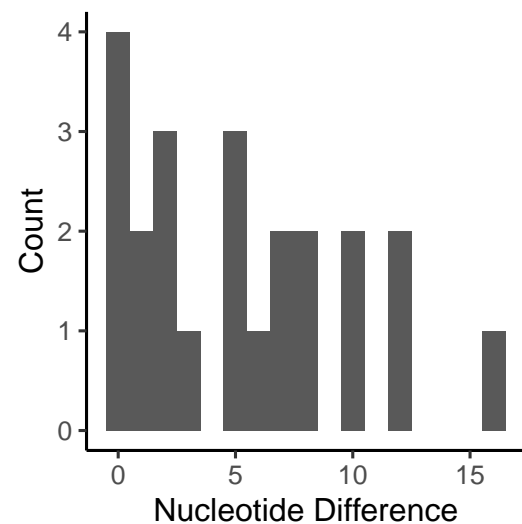
### IGHV3-88\*01\_S6384

4077 sequences assigned  
85 (2.1%) exact matches, in which:  
54 unique CDR3  
6 unique J



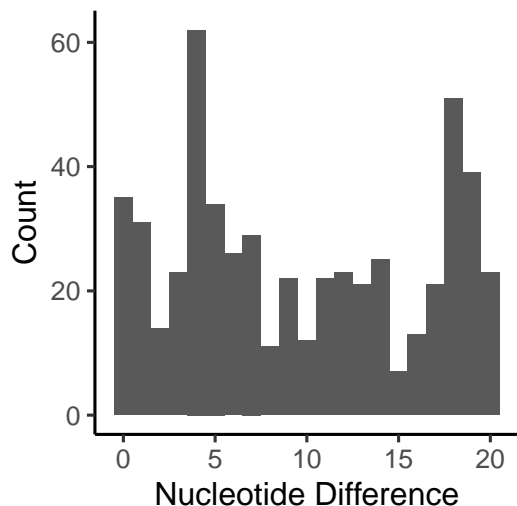
### IGHV3-120\*01\_S4231

23 sequences assigned  
4 (17.4%) exact matches, in which:  
3 unique CDR3  
1 unique J



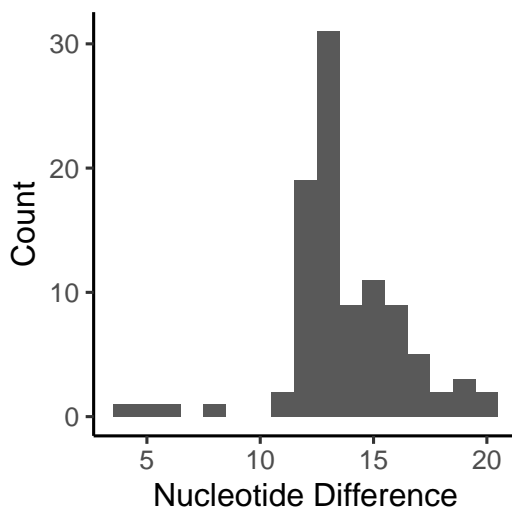
### IGHV3-122\*01\_S5299

783 sequences assigned  
35 (4.5%) exact matches, in which:  
21 unique CDR3  
4 unique J



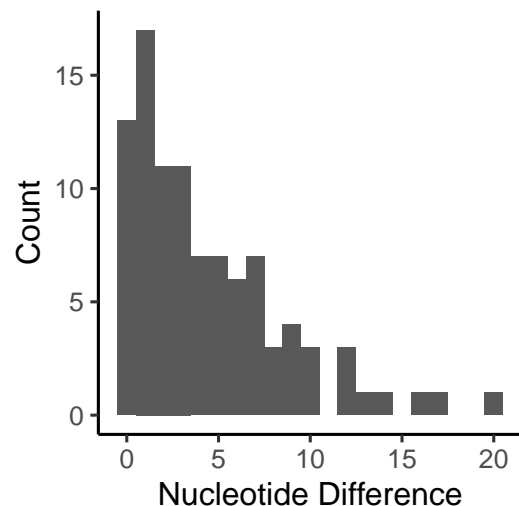
### IGHV3-127\*01\_S7059

247 sequences assigned  
No exact matches.



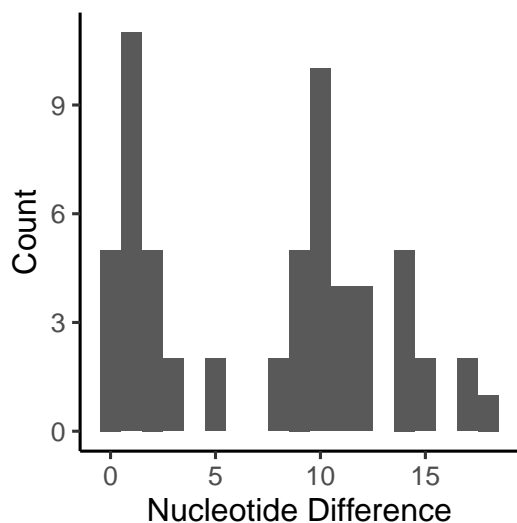
### IGHV3-141\*01\_S3493

100 sequences assigned  
13 (13%) exact matches, in which:  
10 unique CDR3  
4 unique J



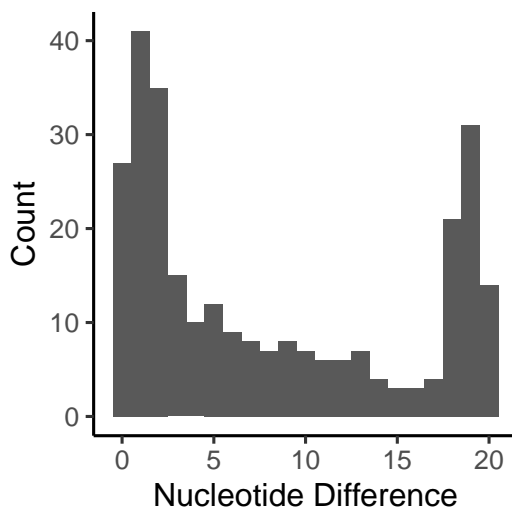
### IGHV3-127\*01\_S5510

63 sequences assigned  
5 (7.9%) exact matches, in which:  
5 unique CDR3  
2 unique J



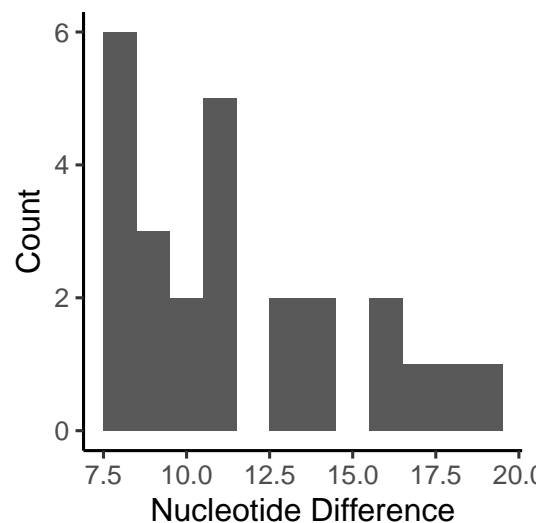
### IGHV3-128\*02\_S0204

345 sequences assigned  
27 (7.8%) exact matches, in which:  
15 unique CDR3  
3 unique J



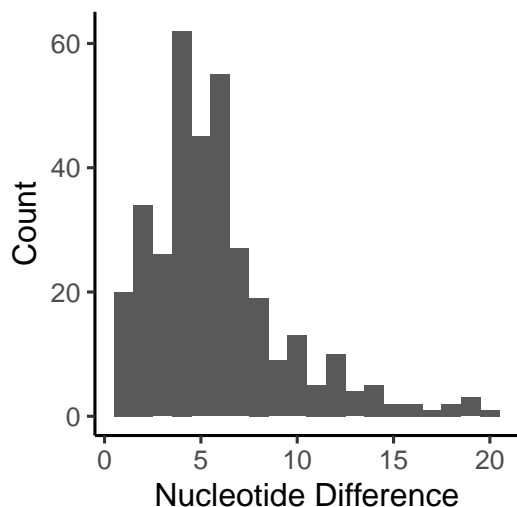
### IGHV3-141\*01\_S5053

62 sequences assigned  
No exact matches.



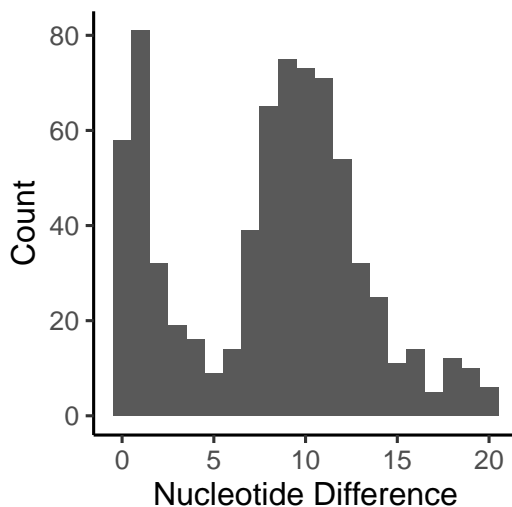
### IGHV3-127\*01\_S6769

351 sequences assigned  
No exact matches.



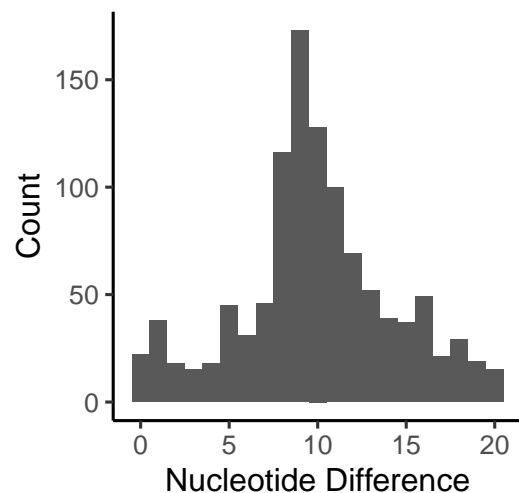
### IGHV3-128\*02\_S6042

789 sequences assigned  
58 (7.4%) exact matches, in which:  
26 unique CDR3  
4 unique J



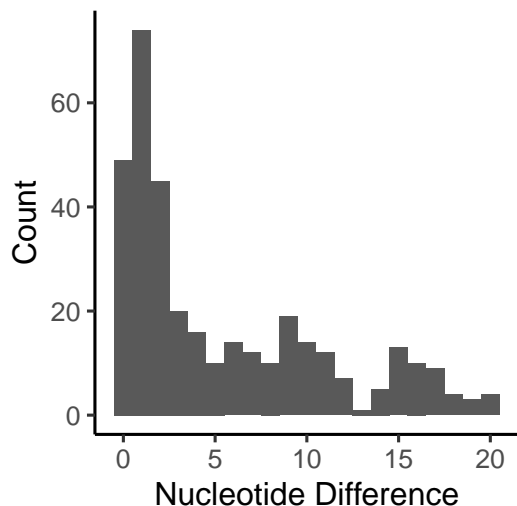
### IGHV3-152\*01\_S7388

1177 sequences assigned  
22 (1.9%) exact matches, in which:  
17 unique CDR3  
3 unique J



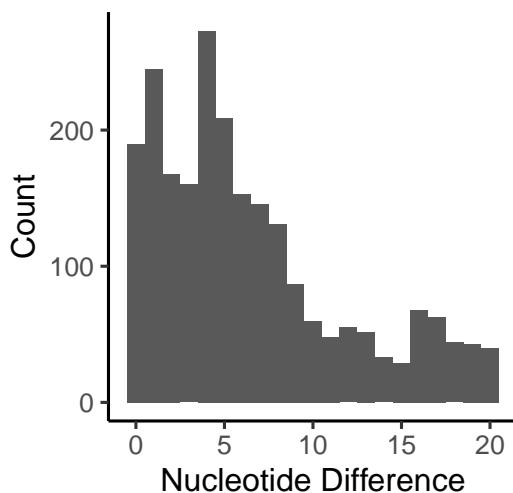
### IGHV3-172\*01\_S0577

364 sequences assigned  
49 (13.5%) exact matches, in which:  
32 unique CDR3  
5 unique J



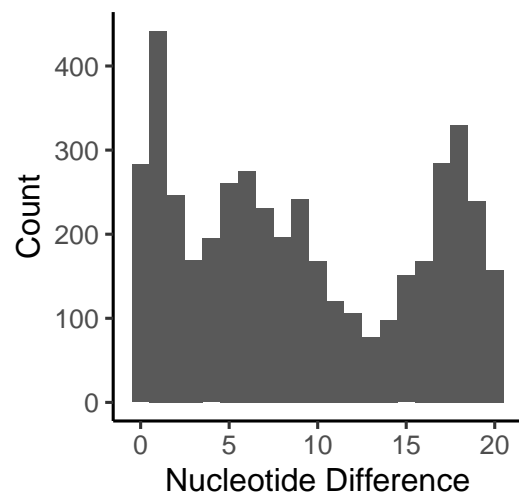
### IGHV3-187\*01\_S1133

3183 sequences assigned  
190 (6%) exact matches, in which:  
111 unique CDR3  
8 unique J



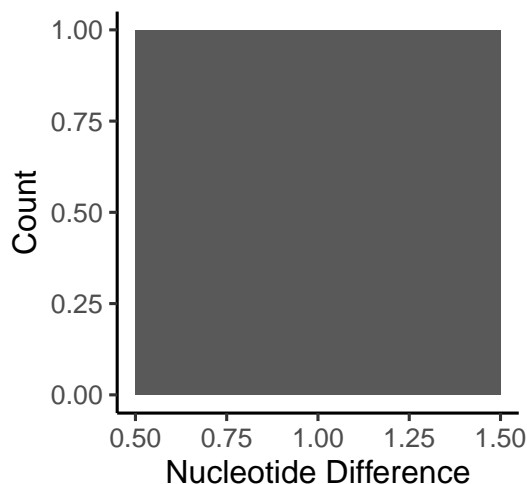
### IGHV3-NL\_11\*01\_S4619

5626 sequences assigned  
283 (5%) exact matches, in which:  
174 unique CDR3  
7 unique J



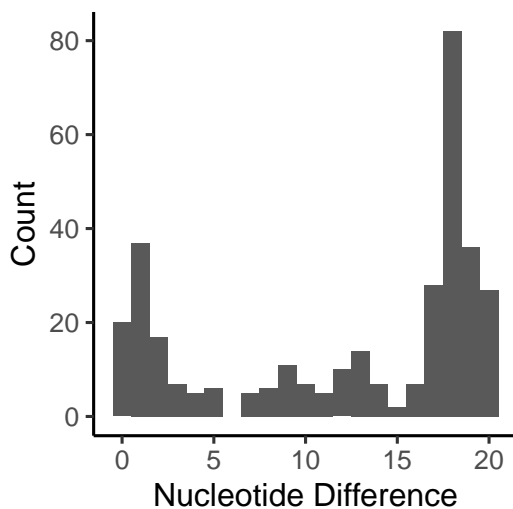
### IGHV3-175\*01\_S1248

1 sequences assigned  
No exact matches.



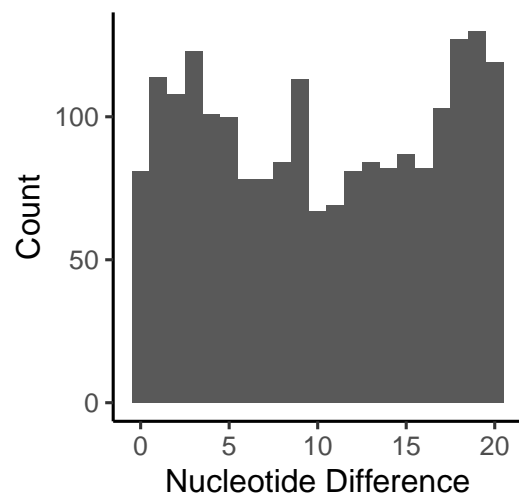
### IGHV3-NL\_1\*01\_S4331

621 sequences assigned  
20 (3.2%) exact matches, in which:  
11 unique CDR3  
4 unique J



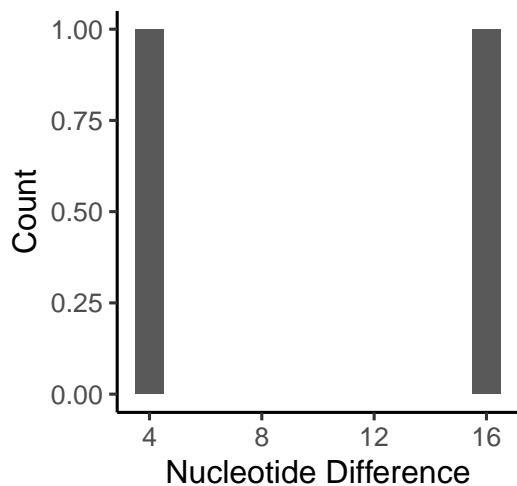
### IGHV3-NL\_11\*01\_S5714

2800 sequences assigned  
81 (2.9%) exact matches, in which:  
47 unique CDR3  
5 unique J



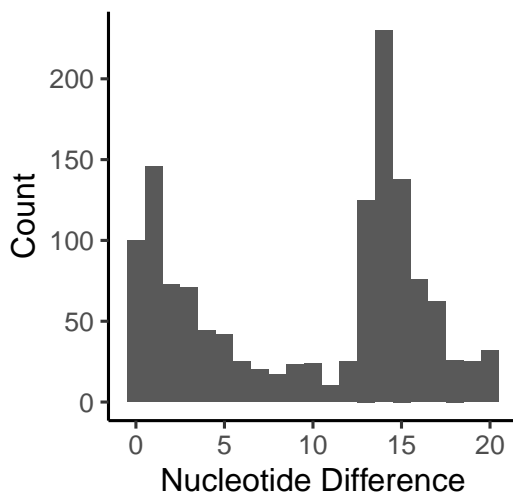
### IGHV3-177\*01\_S1591

3 sequences assigned  
No exact matches.



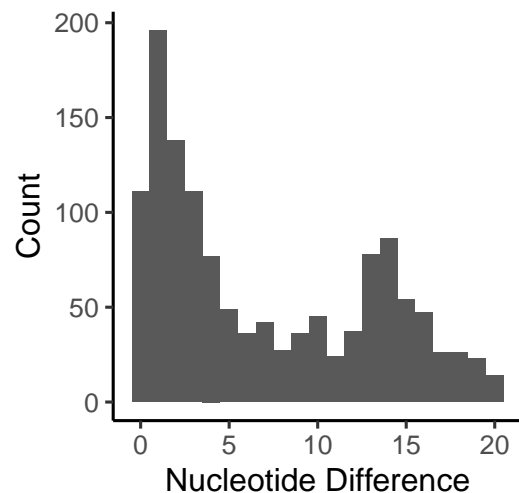
### IGHV3-NL\_1\*01\_S9422

1613 sequences assigned  
100 (6.2%) exact matches, in which:  
70 unique CDR3  
6 unique J



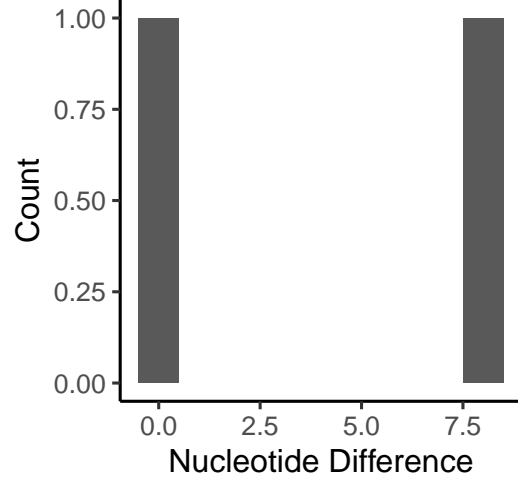
### IGHV3-NL\_11\*01\_S9627

1336 sequences assigned  
111 (8.3%) exact matches, in which:  
73 unique CDR3  
6 unique J



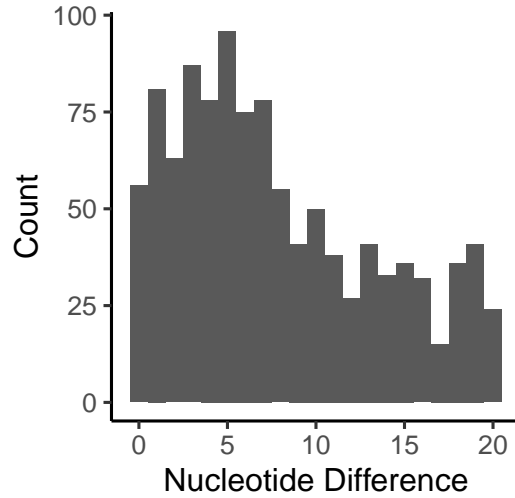
### IGHV3–NL\_12\*02\_S6994

2 sequences assigned  
1 (50%) exact matches, in which:  
1 unique CDR3  
1 unique J



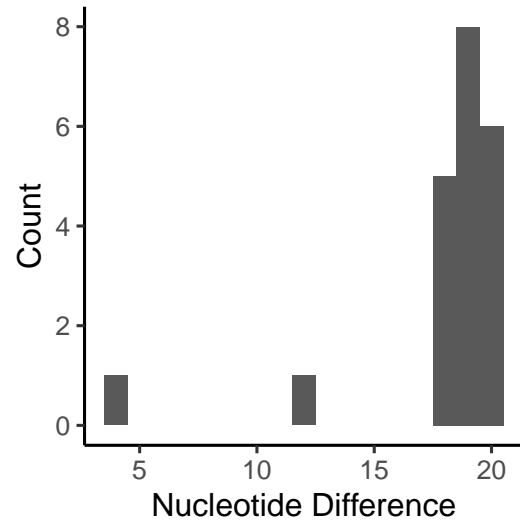
### IGHV3–NL\_17\*01\_S5770

1192 sequences assigned  
56 (4.7%) exact matches, in which:  
36 unique CDR3  
6 unique J



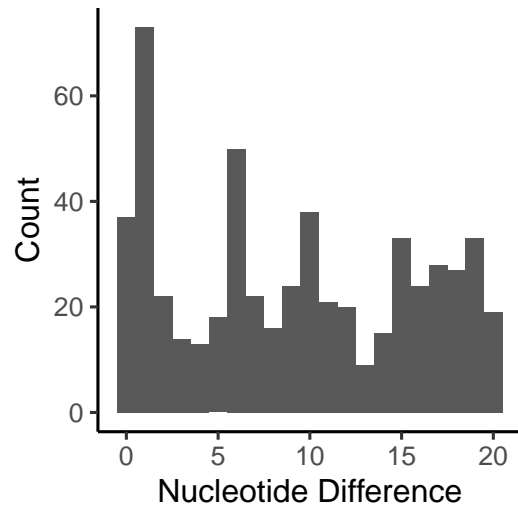
### IGHV3–NL\_18\*01\_S6383

33 sequences assigned  
No exact matches.



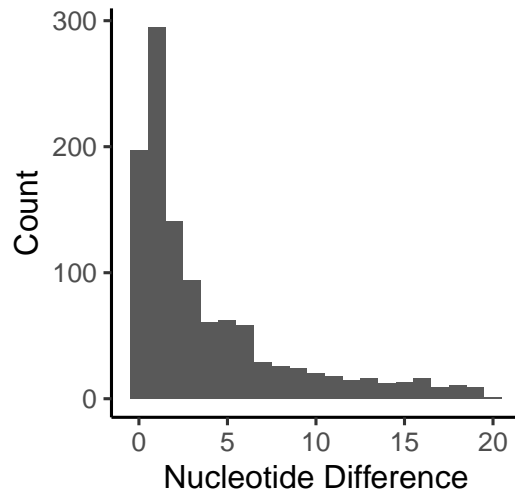
### IGHV3–NL\_15\*01\_S5125

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



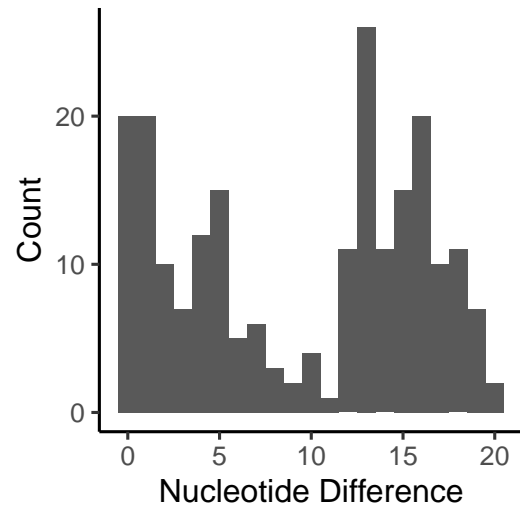
### IGHV3–NL\_17\*01\_S8244

1141 sequences assigned  
197 (17.3%) exact matches, in which:  
136 unique CDR3  
7 unique J



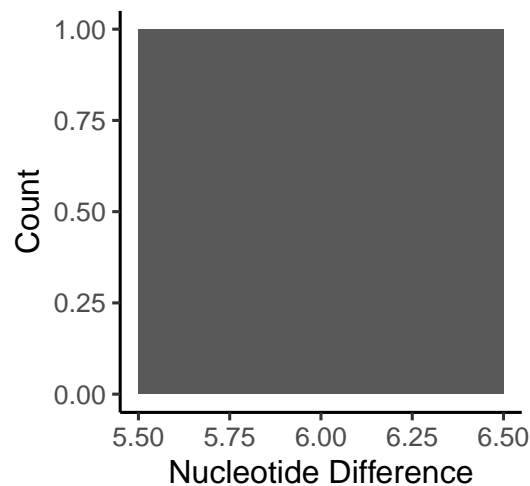
### IGHV3–NL\_19\*01\_S9323

241 sequences assigned  
20 (8.3%) exact matches, in which:  
15 unique CDR3  
6 unique J



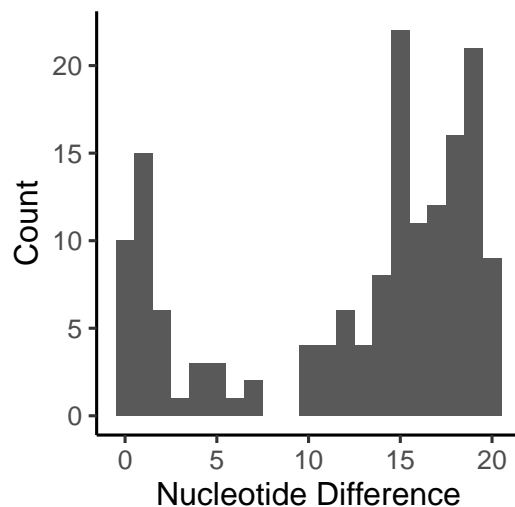
### IGHV3–NL\_16\*01\_S5133

9 sequences assigned  
No exact matches.



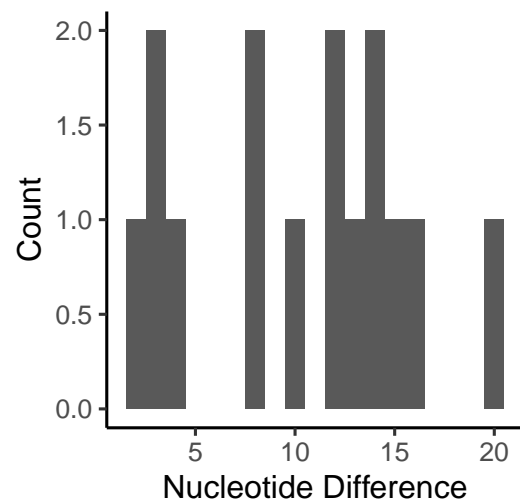
### IGHV3–NL\_18\*01\_S0984

176 sequences assigned  
10 (5.7%) exact matches, in which:  
9 unique CDR3  
4 unique J



### IGHV3–NL\_2\*01\_S3900

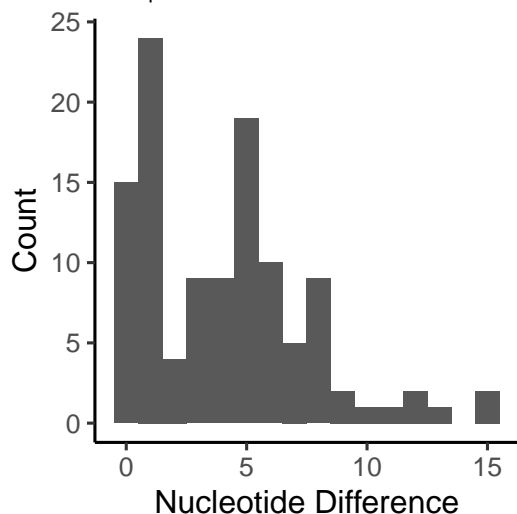
27 sequences assigned  
No exact matches.





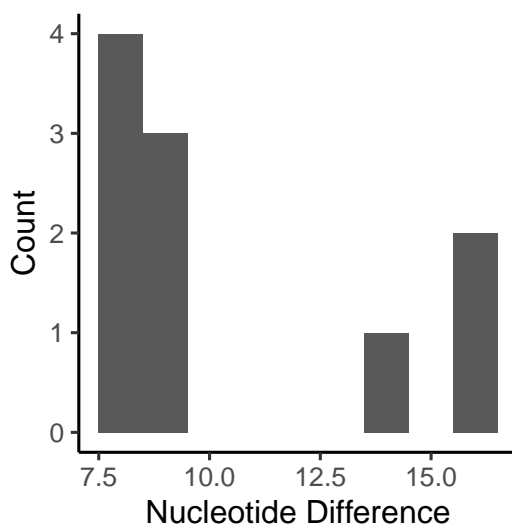
### IGHV3–NL\_4\*01\_S2727

118 sequences assigned  
15 (12.7%) exact matches, in which:  
11 unique CDR3  
4 unique J



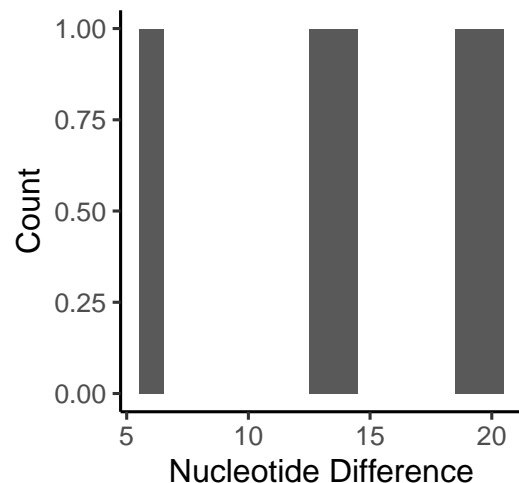
### IGHV3–NL\_6\*02\_S7808

21 sequences assigned  
No exact matches.



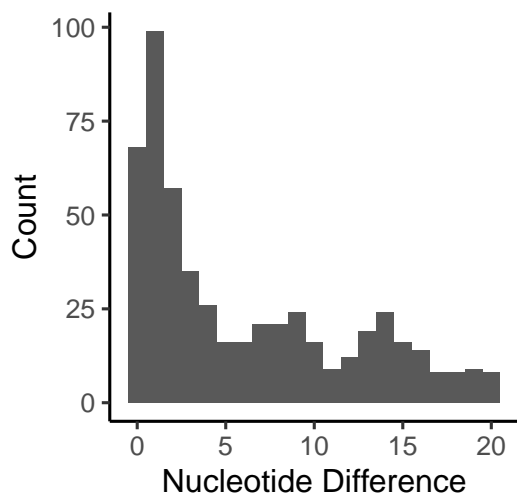
### IGHV3–NL\_9\*01\_S6098

9 sequences assigned  
No exact matches.



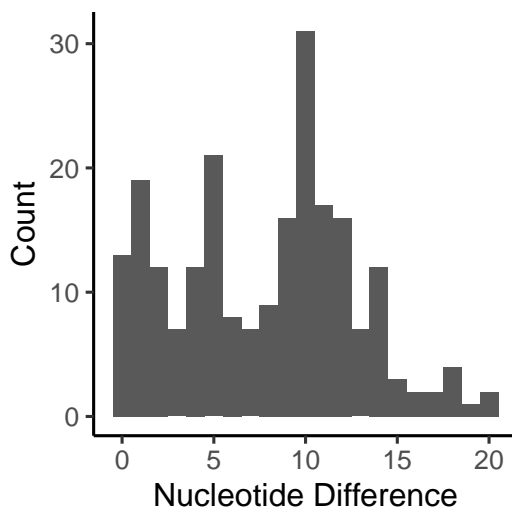
### IGHV3–NL\_4\*01\_S9635

728 sequences assigned  
68 (9.3%) exact matches, in which:  
46 unique CDR3  
6 unique J



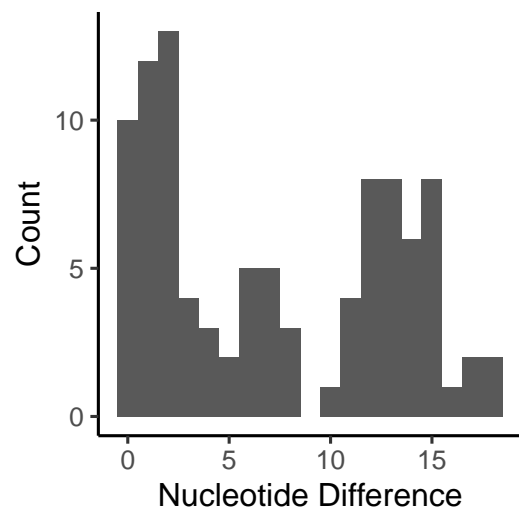
### IGHV3–NL\_8\*01\_S7474

266 sequences assigned  
13 (4.9%) exact matches, in which:  
10 unique CDR3  
3 unique J



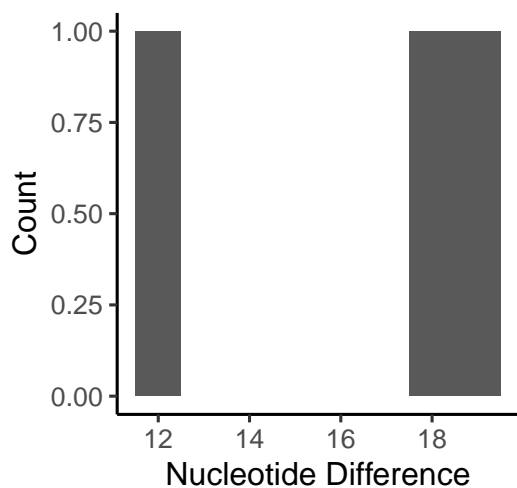
### IGHV4–67\*01\_S8901

104 sequences assigned  
10 (9.6%) exact matches, in which:  
8 unique CDR3  
4 unique J



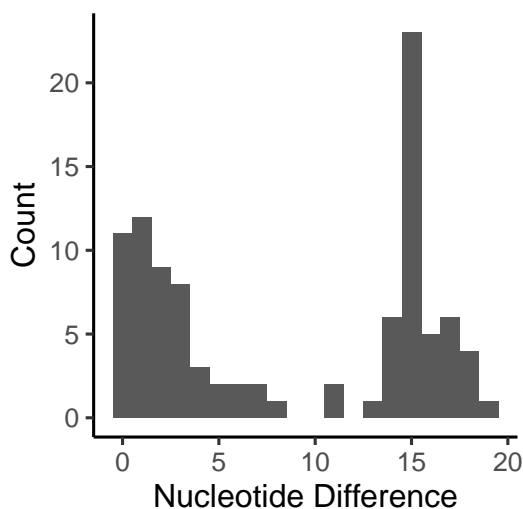
### IGHV3–NL\_5\*01\_S8361

3 sequences assigned  
No exact matches.



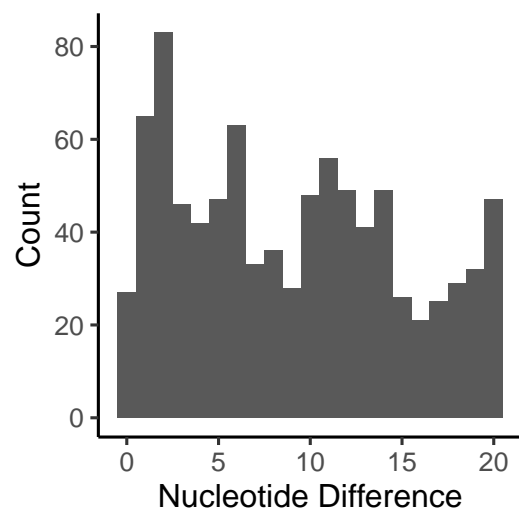
### IGHV3–NL\_8\*01\_S7860

107 sequences assigned  
11 (10.3%) exact matches, in which:  
6 unique CDR3  
3 unique J



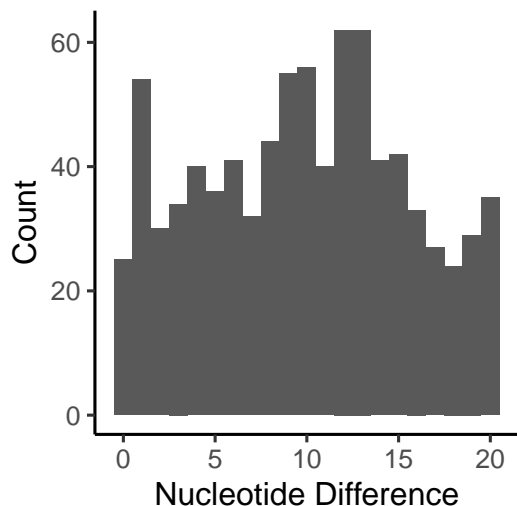
### IGHV4–72\*01\_S1622

1256 sequences assigned  
27 (2.1%) exact matches, in which:  
24 unique CDR3  
6 unique J



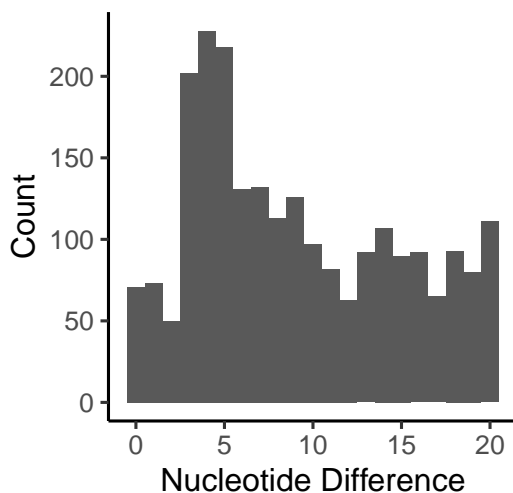
### IGHV4-72\*01\_S2051

969 sequences assigned  
25 (2.6%) exact matches, in which:  
18 unique CDR3  
6 unique J



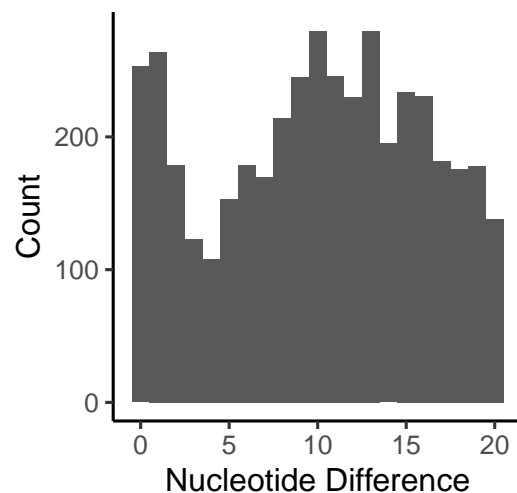
### IGHV4-117\*01\_S5847

2933 sequences assigned  
71 (2.4%) exact matches, in which:  
60 unique CDR3  
7 unique J



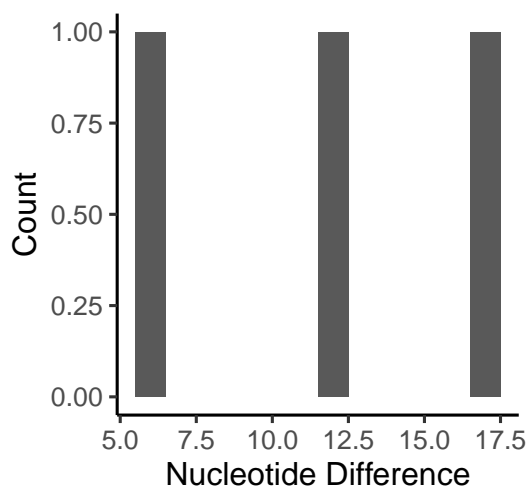
### IGHV4-149\*01\_S0794

5854 sequences assigned  
253 (4.3%) exact matches, in which:  
188 unique CDR3  
7 unique J



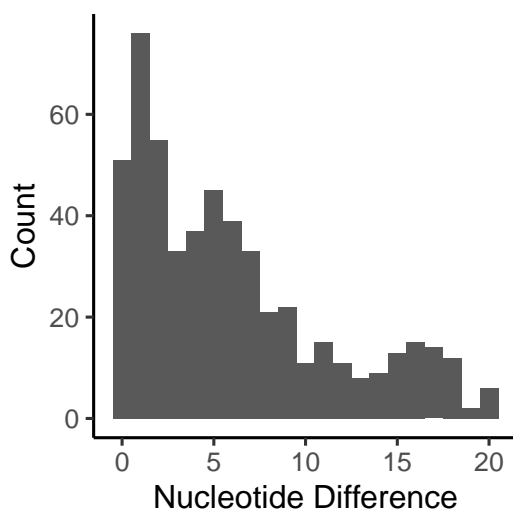
### IGHV4-79\*02\_S9501

4 sequences assigned  
No exact matches.



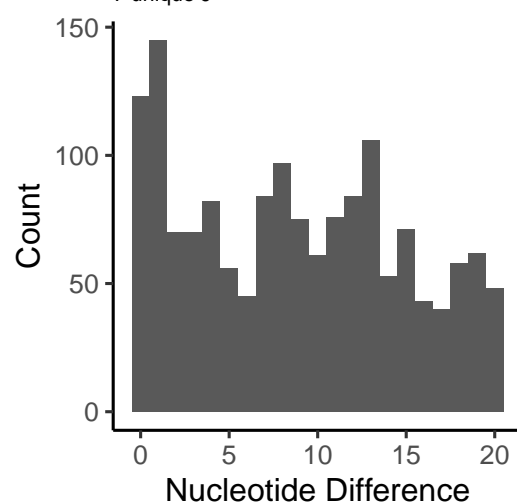
### IGHV4-144\*01\_S2658

607 sequences assigned  
51 (8.4%) exact matches, in which:  
44 unique CDR3  
6 unique J



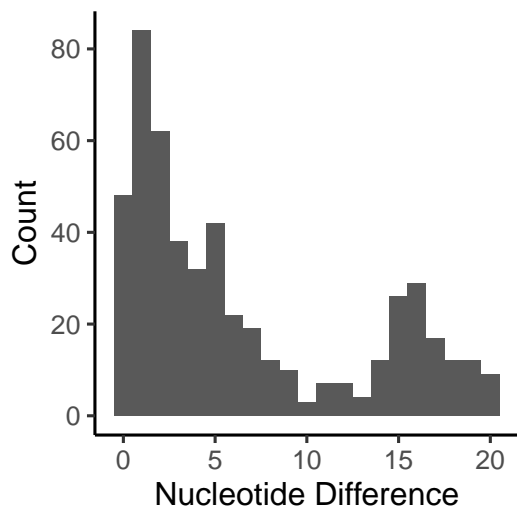
### IGHV4-149\*01\_S1430

1847 sequences assigned  
123 (6.7%) exact matches, in which:  
92 unique CDR3  
7 unique J



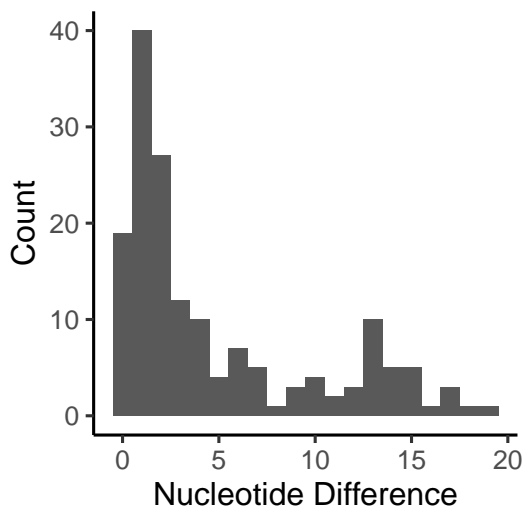
### IGHV4-93\*01\_S0171

542 sequences assigned  
48 (8.9%) exact matches, in which:  
41 unique CDR3  
6 unique J



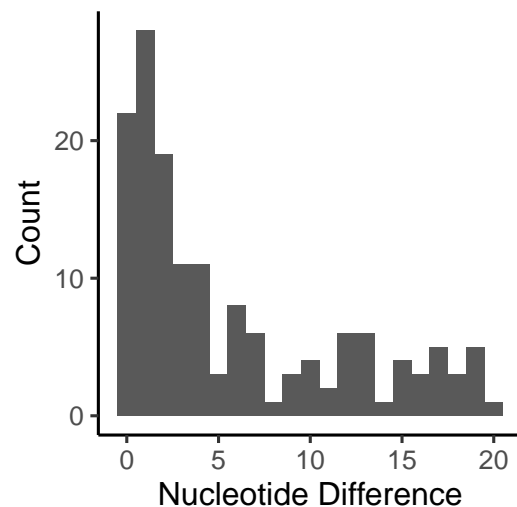
### IGHV4-144\*01\_S9923

167 sequences assigned  
19 (11.4%) exact matches, in which:  
16 unique CDR3  
6 unique J



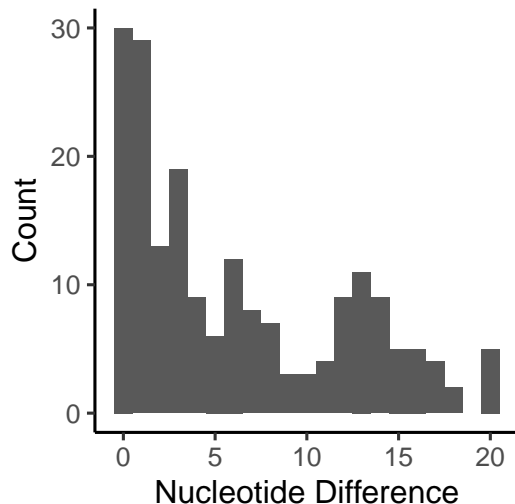
### IGHV4-150\*01\_S1822

155 sequences assigned  
22 (14.2%) exact matches, in which:  
16 unique CDR3  
4 unique J



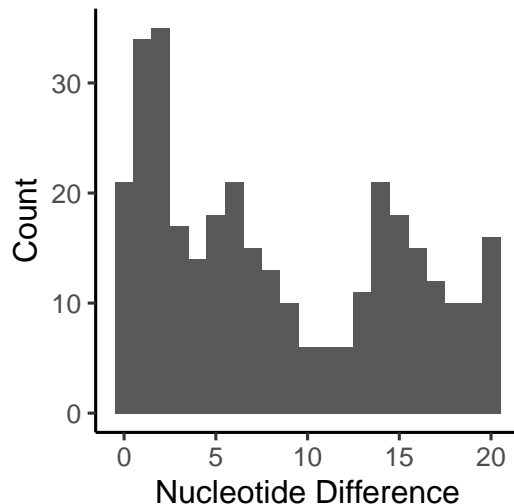
### IGHV4-150\*01\_S5542

259 sequences assigned  
30 (11.6%) exact matches, in which:  
23 unique CDR3  
5 unique J



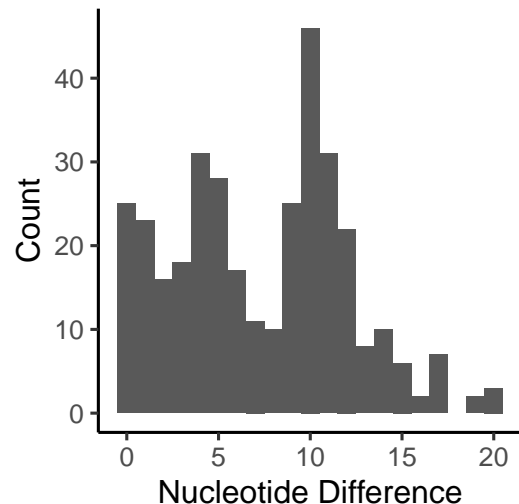
### IGHV4-NL\_1\*01\_S0419

541 sequences assigned  
21 (3.9%) exact matches, in which:  
18 unique CDR3  
6 unique J



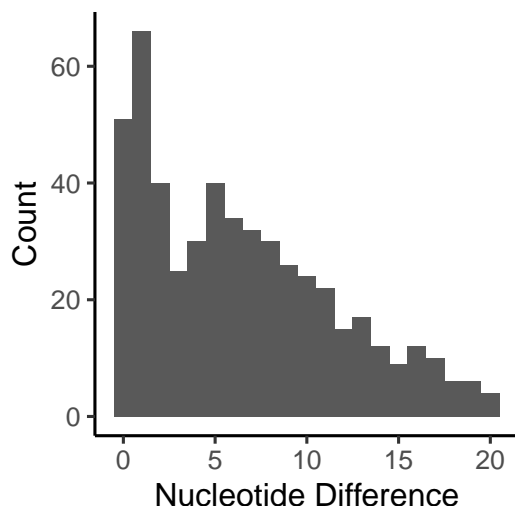
### IGHV4-NL\_1\*02\_S8056

353 sequences assigned  
25 (7.1%) exact matches, in which:  
19 unique CDR3  
6 unique J



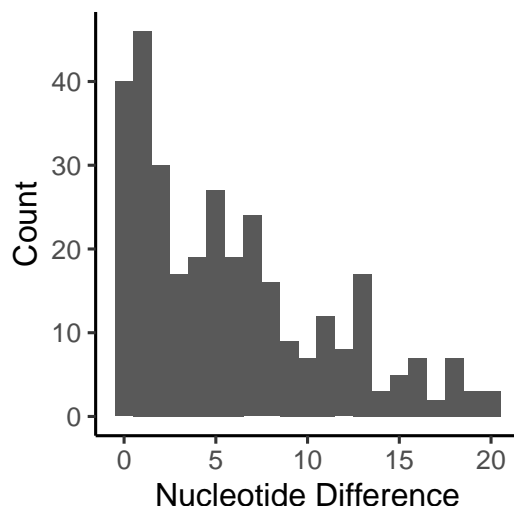
### IGHV4-150\*01\_S9374

596 sequences assigned  
51 (8.6%) exact matches, in which:  
42 unique CDR3  
6 unique J



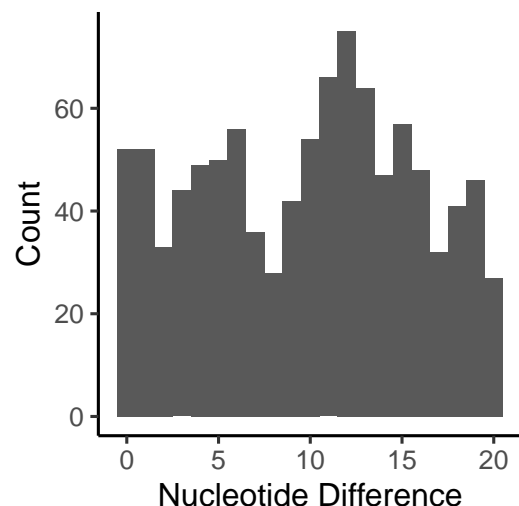
### IGHV4-NL\_1\*01\_S7240

373 sequences assigned  
40 (10.7%) exact matches, in which:  
31 unique CDR3  
6 unique J



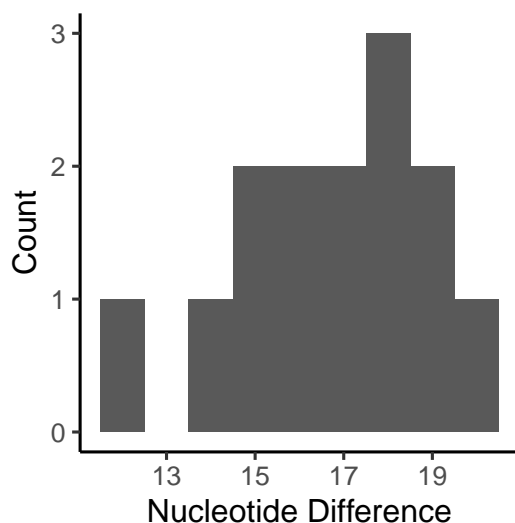
### IGHV4-NL\_11\*01\_S5570

1271 sequences assigned  
52 (4.1%) exact matches, in which:  
43 unique CDR3  
7 unique J



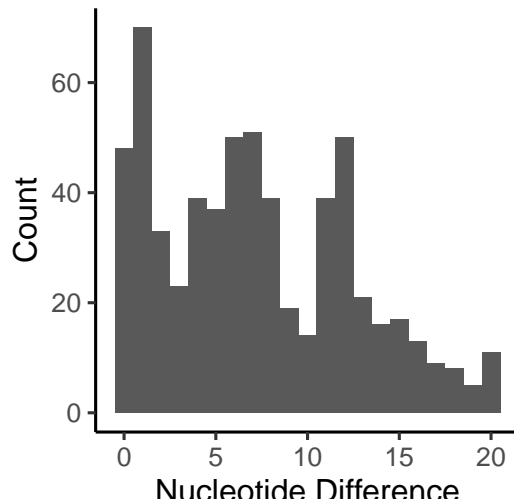
### IGHV4-174\*02\_S5400

154 sequences assigned  
No exact matches.



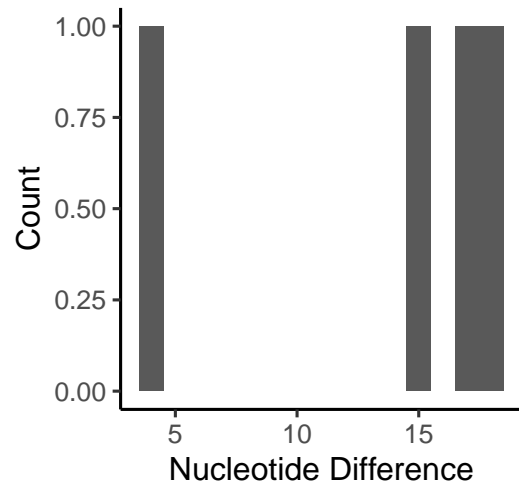
### IGHV4-NL\_1\*01\_S9508

667 sequences assigned  
48 (7.2%) exact matches, in which:  
36 unique CDR3  
4 unique J



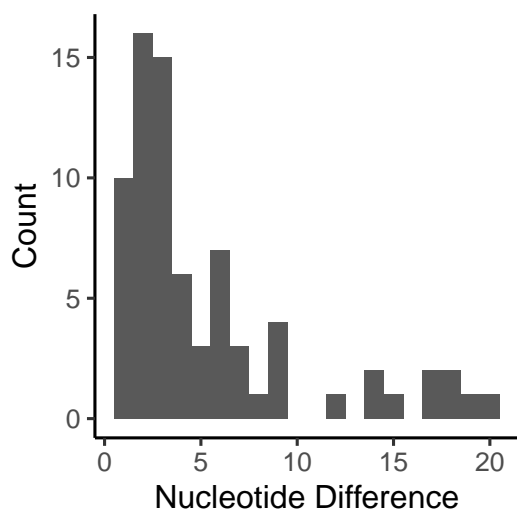
### IGHV4-NL\_12\*01\_S8068

6 sequences assigned  
No exact matches.



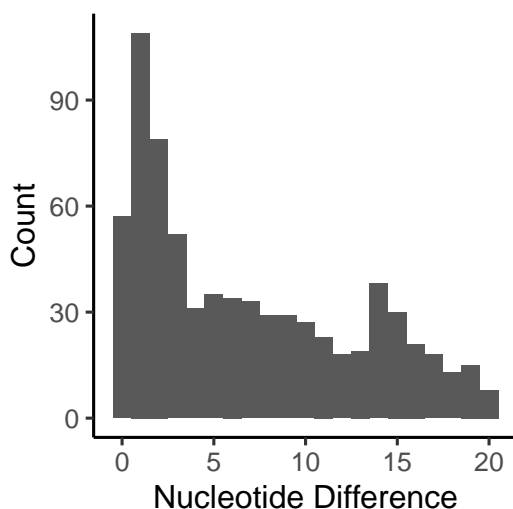
### IGHV4–NL\_13\*01\_S9624

81 sequences assigned  
No exact matches.



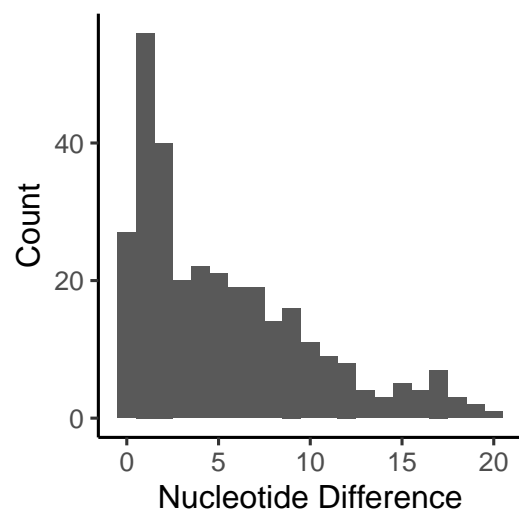
### IGHV4–NL\_17\*01\_S0936

803 sequences assigned  
57 (7.1%) exact matches, in which:  
47 unique CDR3  
7 unique J



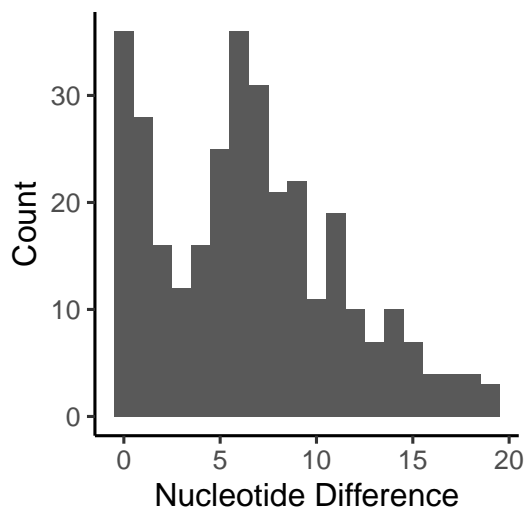
### IGHV4–NL\_20\*01\_S0030

413 sequences assigned  
27 (6.5%) exact matches, in which:  
24 unique CDR3  
6 unique J



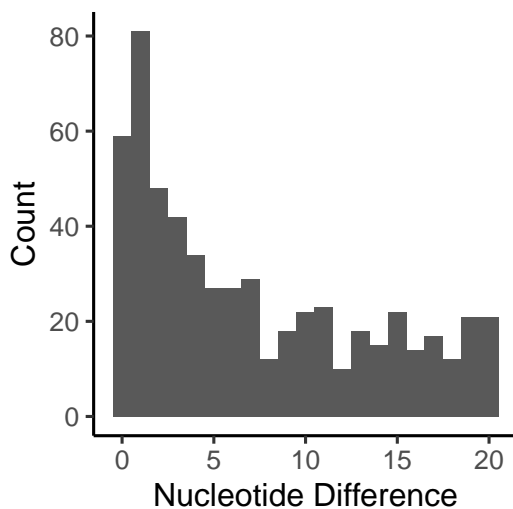
### IGHV4–NL\_15\*01\_S5717

391 sequences assigned  
36 (9.2%) exact matches, in which:  
29 unique CDR3  
5 unique J



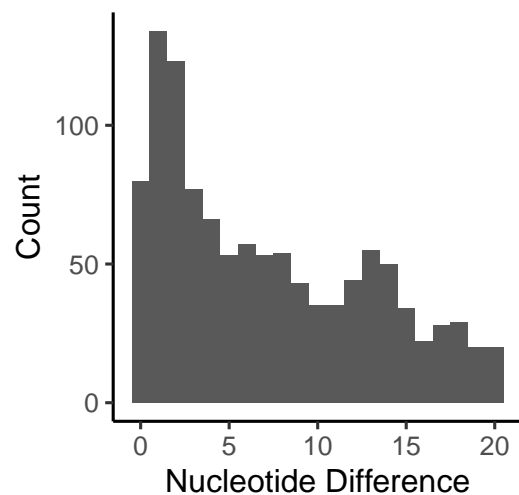
### IGHV4–NL\_17\*01\_S4099

1133 sequences assigned  
59 (5.2%) exact matches, in which:  
53 unique CDR3  
6 unique J



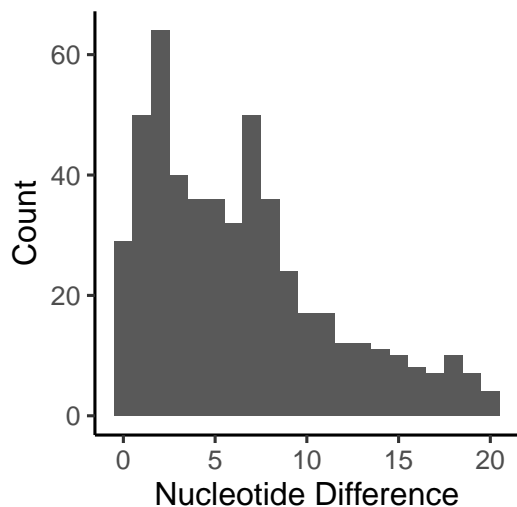
### IGHV4–NL\_21\*01\_S4478

1492 sequences assigned  
80 (5.4%) exact matches, in which:  
68 unique CDR3  
6 unique J



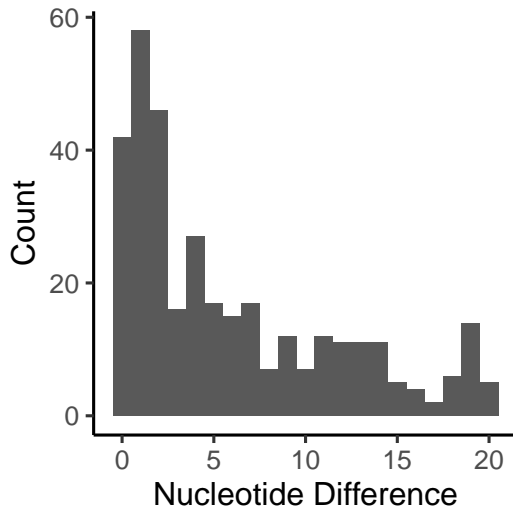
### IGHV4–NL\_16\*01\_S2324

635 sequences assigned  
29 (4.6%) exact matches, in which:  
25 unique CDR3  
5 unique J



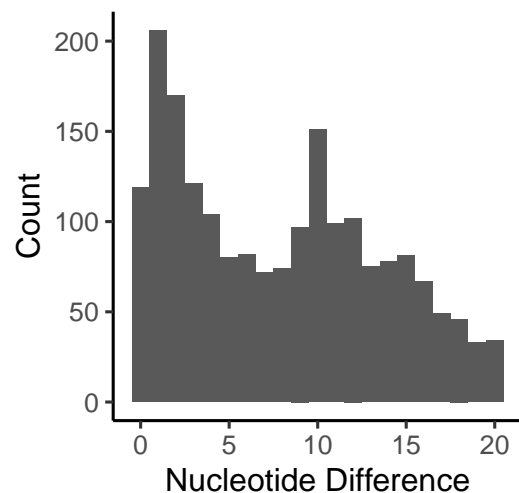
### IGHV4–NL\_17\*01\_S4954

360 sequences assigned  
42 (11.7%) exact matches, in which:  
39 unique CDR3  
7 unique J



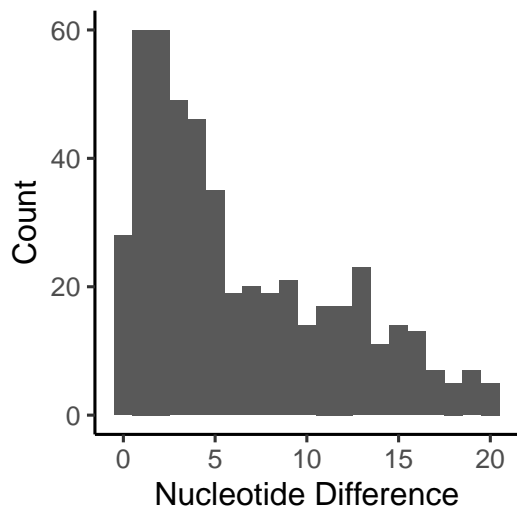
### IGHV4–NL\_21\*01\_S7469

2445 sequences assigned  
119 (4.9%) exact matches, in which:  
95 unique CDR3  
7 unique J



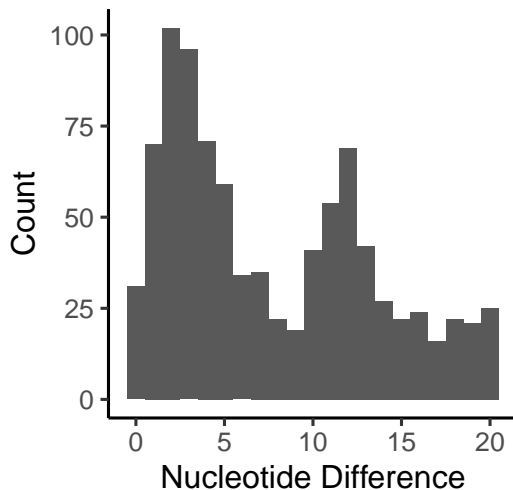
### IGHV4–NL\_22\*01\_S6977

594 sequences assigned  
28 (4.7%) exact matches, in which:  
28 unique CDR3  
7 unique J



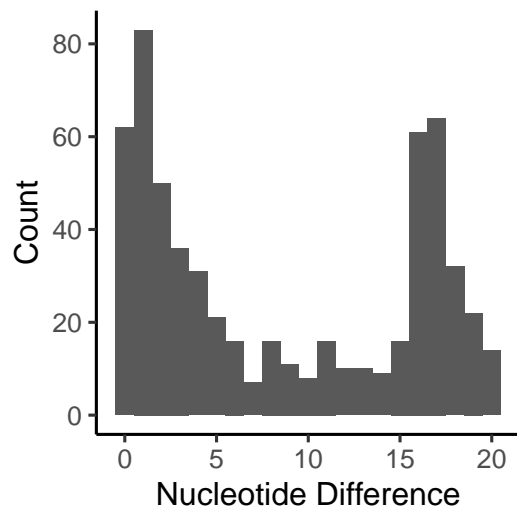
### IGHV4–NL\_25\*01\_S9955

1063 sequences assigned  
31 (2.9%) exact matches, in which:  
25 unique CDR3  
5 unique J



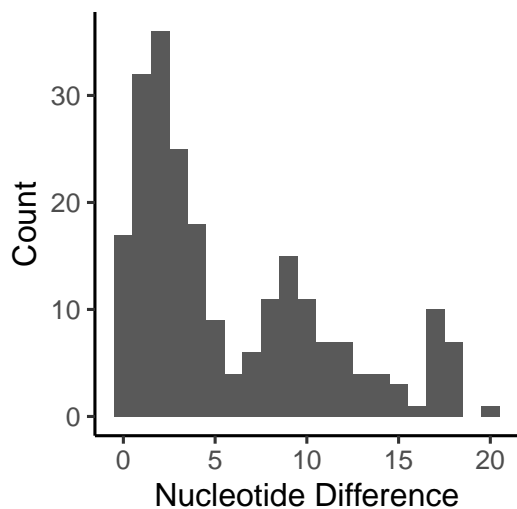
### IGHV4–NL\_29\*01\_S9965

657 sequences assigned  
62 (9.4%) exact matches, in which:  
50 unique CDR3  
7 unique J



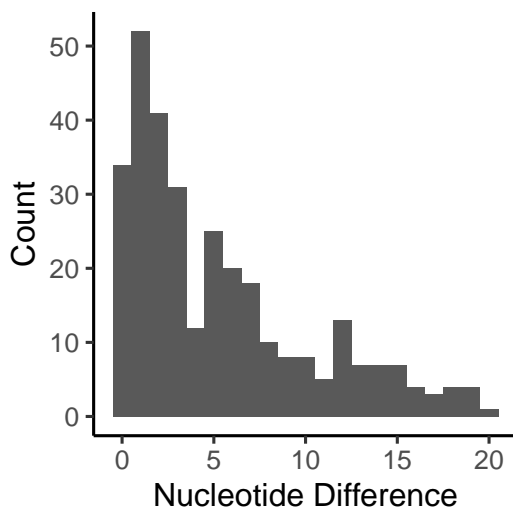
### IGHV4–NL\_24\*01\_S0809

238 sequences assigned  
17 (7.1%) exact matches, in which:  
16 unique CDR3  
5 unique J



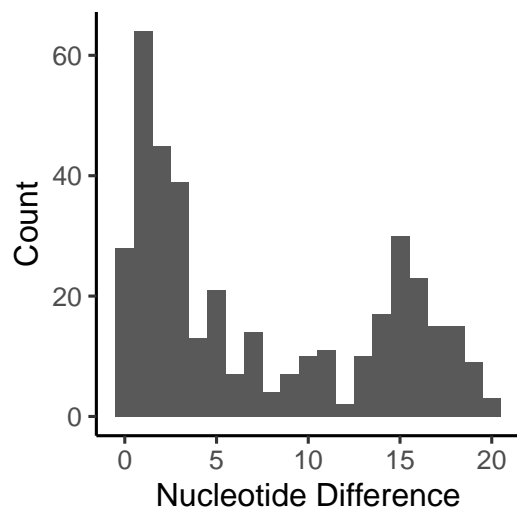
### IGHV4–NL\_27\*01\_S5706

330 sequences assigned  
34 (10.3%) exact matches, in which:  
29 unique CDR3  
4 unique J



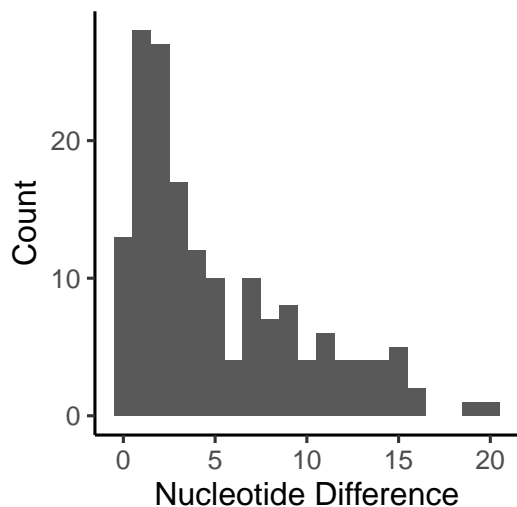
### IGHV4–NL\_30\*01\_S4251

428 sequences assigned  
28 (6.5%) exact matches, in which:  
22 unique CDR3  
6 unique J



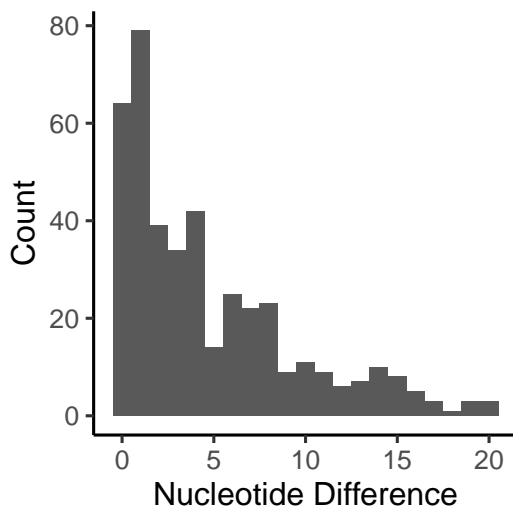
### IGHV4–NL\_24\*01\_S5697

182 sequences assigned  
13 (7.1%) exact matches, in which:  
13 unique CDR3  
7 unique J



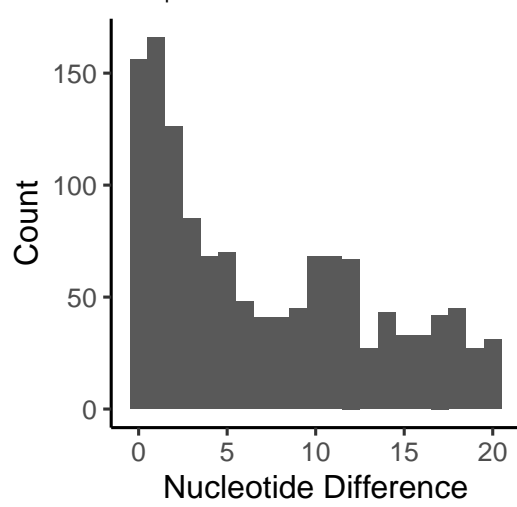
### IGHV4–NL\_27\*01\_S6960

472 sequences assigned  
64 (13.6%) exact matches, in which:  
49 unique CDR3  
6 unique J



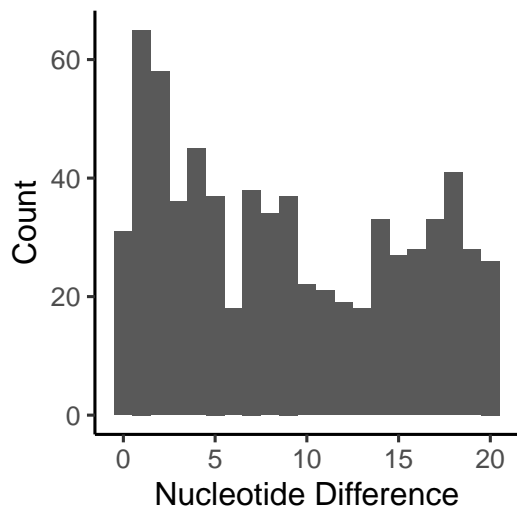
### IGHV4–NL\_31\*01\_S7693

1594 sequences assigned  
156 (9.8%) exact matches, in which:  
119 unique CDR3  
7 unique J



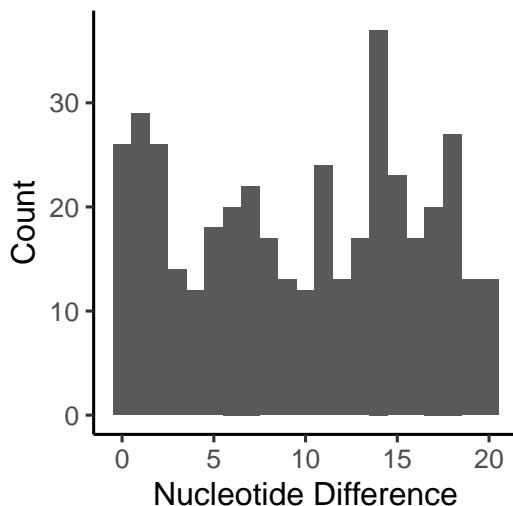
### IGHV4–NL\_33\*01\_S4467

1561 sequences assigned  
31 (2%) exact matches, in which:  
31 unique CDR3  
4 unique J



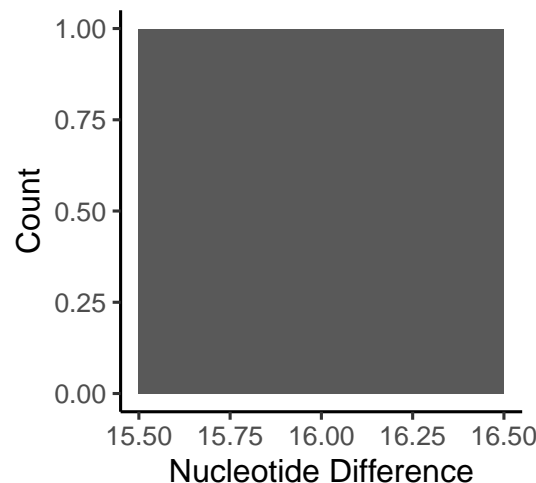
### IGHV4–NL\_36\*01\_S0936

449 sequences assigned  
26 (5.8%) exact matches, in which:  
20 unique CDR3  
6 unique J



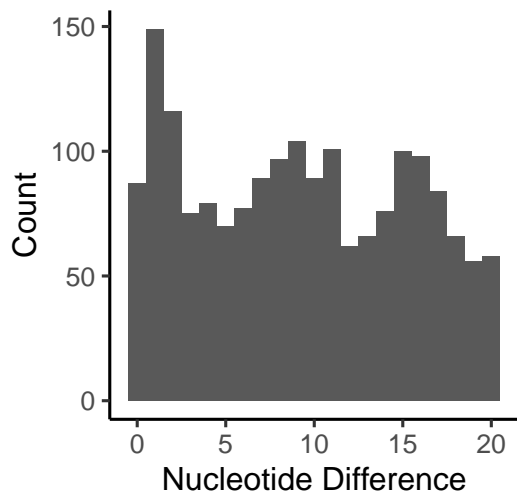
### IGHV4–NL\_40\*01\_S0690

2 sequences assigned  
No exact matches.



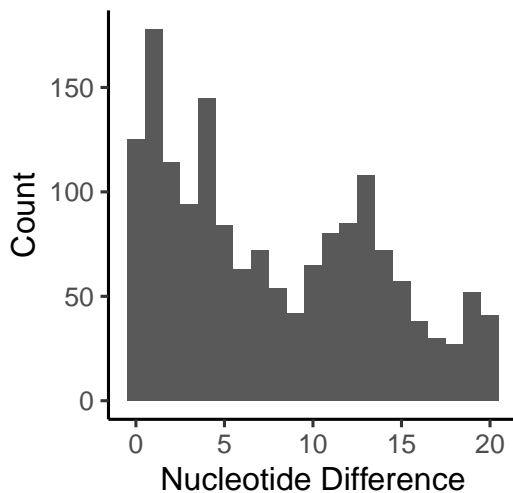
### IGHV4–NL\_33\*01\_S5330

2098 sequences assigned  
87 (4.1%) exact matches, in which:  
74 unique CDR3  
7 unique J



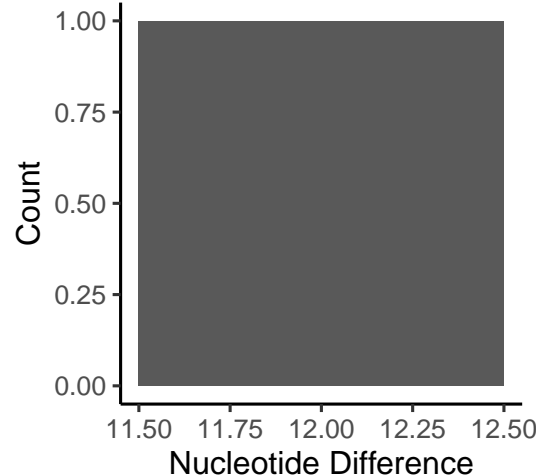
### IGHV4–NL\_36\*01\_S5847

1972 sequences assigned  
125 (6.3%) exact matches, in which:  
105 unique CDR3  
7 unique J



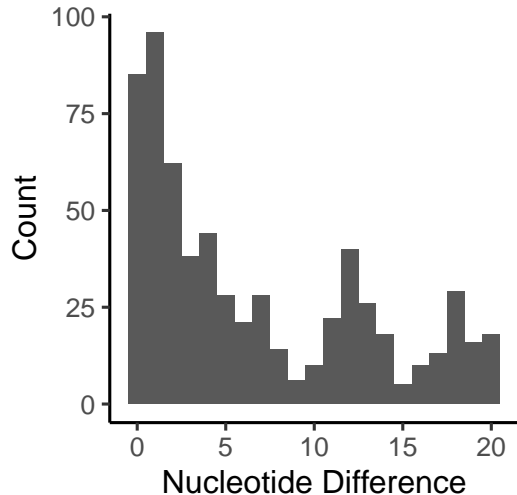
### IGHV4–NL\_42\*01\_S3070

1 sequences assigned  
No exact matches.



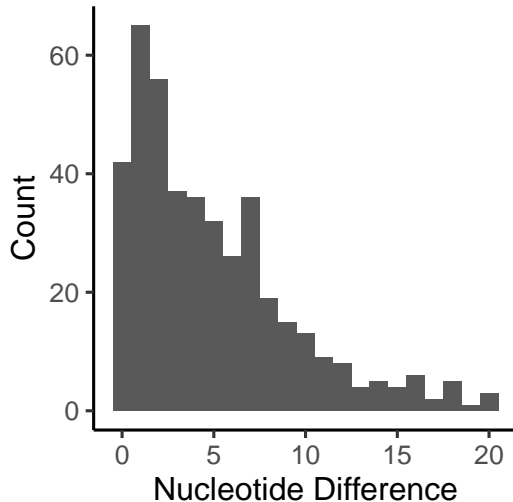
### IGHV4–NL\_36\*01\_S0848

680 sequences assigned  
85 (12.5%) exact matches, in which:  
65 unique CDR3  
7 unique J



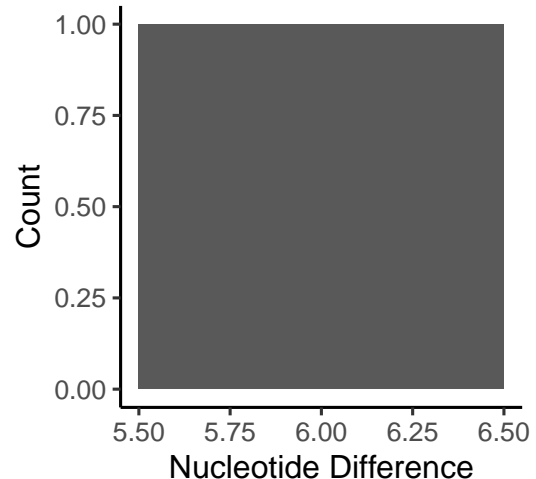
### IGHV4–NL\_38\*01\_S0981

487 sequences assigned  
42 (8.6%) exact matches, in which:  
32 unique CDR3  
6 unique J



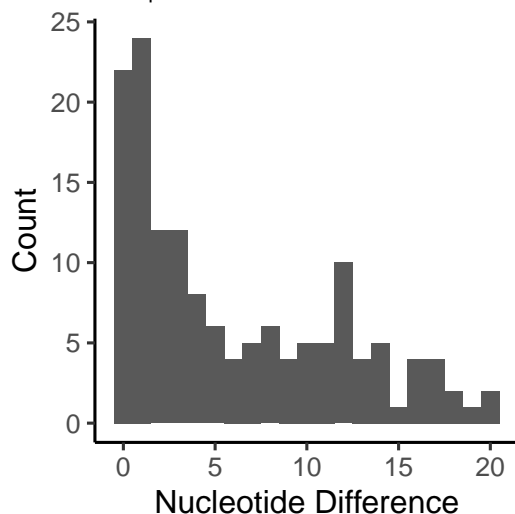
### IGHV4–NL\_43\*01\_S4510

1 sequences assigned  
No exact matches.



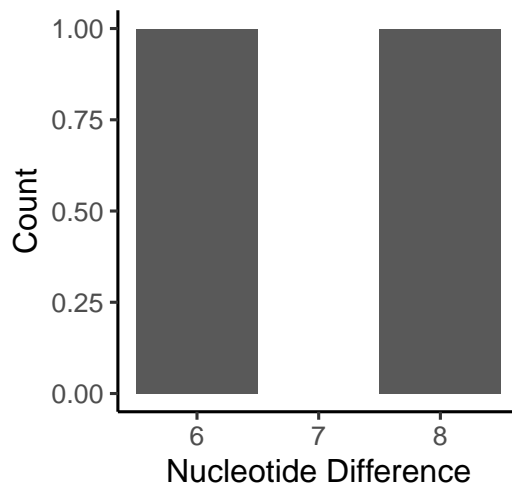
### IGHV4–NL\_5\*01\_S5158

156 sequences assigned  
22 (14.1%) exact matches, in which:  
19 unique CDR3  
6 unique J



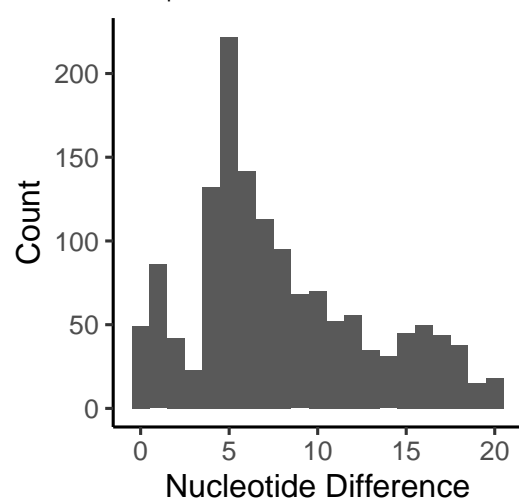
### IGHV4–NL\_9\*01\_S4990

15 sequences assigned  
No exact matches.



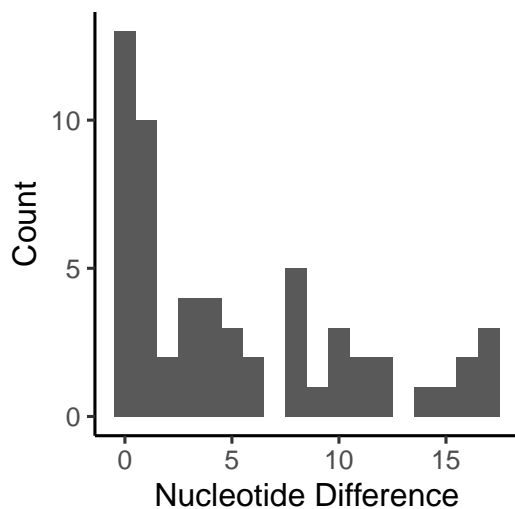
### IGHV5–157\*01\_S8626

1579 sequences assigned  
49 (3.1%) exact matches, in which:  
28 unique CDR3  
6 unique J



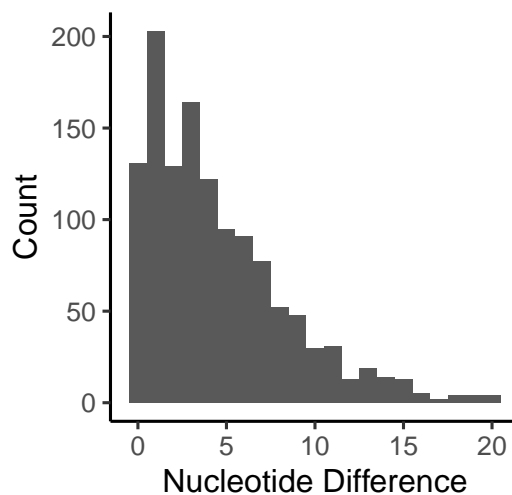
### IGHV4–NL\_5\*01\_S6060

70 sequences assigned  
13 (18.6%) exact matches, in which:  
12 unique CDR3  
4 unique J



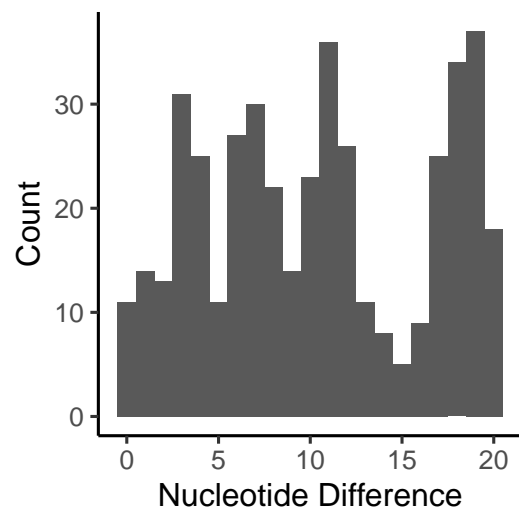
### IGHV5–15\*01\_S0203

1260 sequences assigned  
131 (10.4%) exact matches, in which:  
87 unique CDR3  
7 unique J



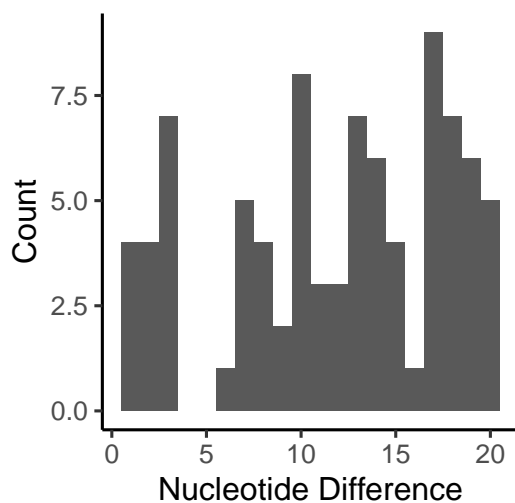
### IGHV7–86\*01\_S7736

476 sequences assigned  
11 (2.3%) exact matches, in which:  
7 unique CDR3  
2 unique J



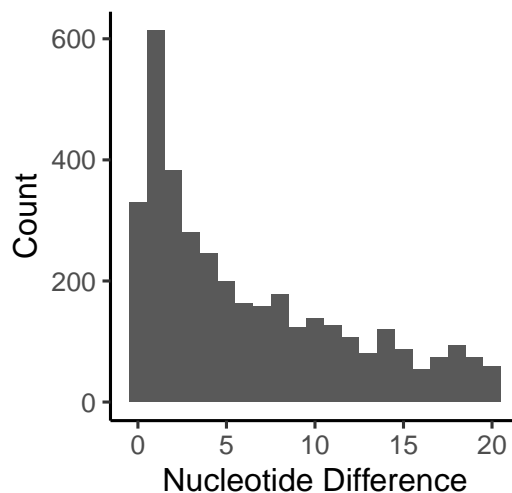
### IGHV4–NL\_5\*01\_S8913

110 sequences assigned  
No exact matches.



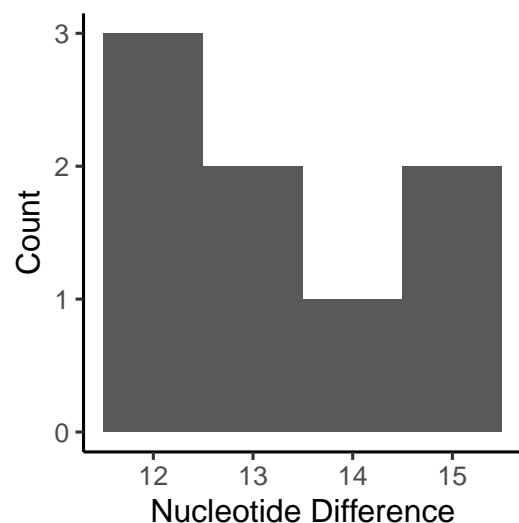
### IGHV5–15\*01\_S8661

4016 sequences assigned  
330 (8.2%) exact matches, in which:  
190 unique CDR3  
8 unique J



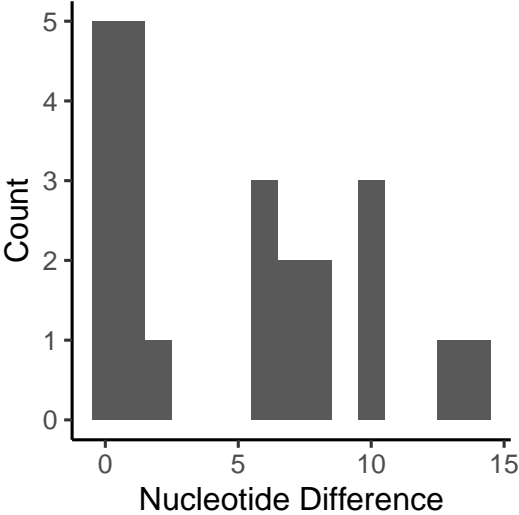
### IGHV7–135\*01\_S4281

9 sequences assigned  
No exact matches.

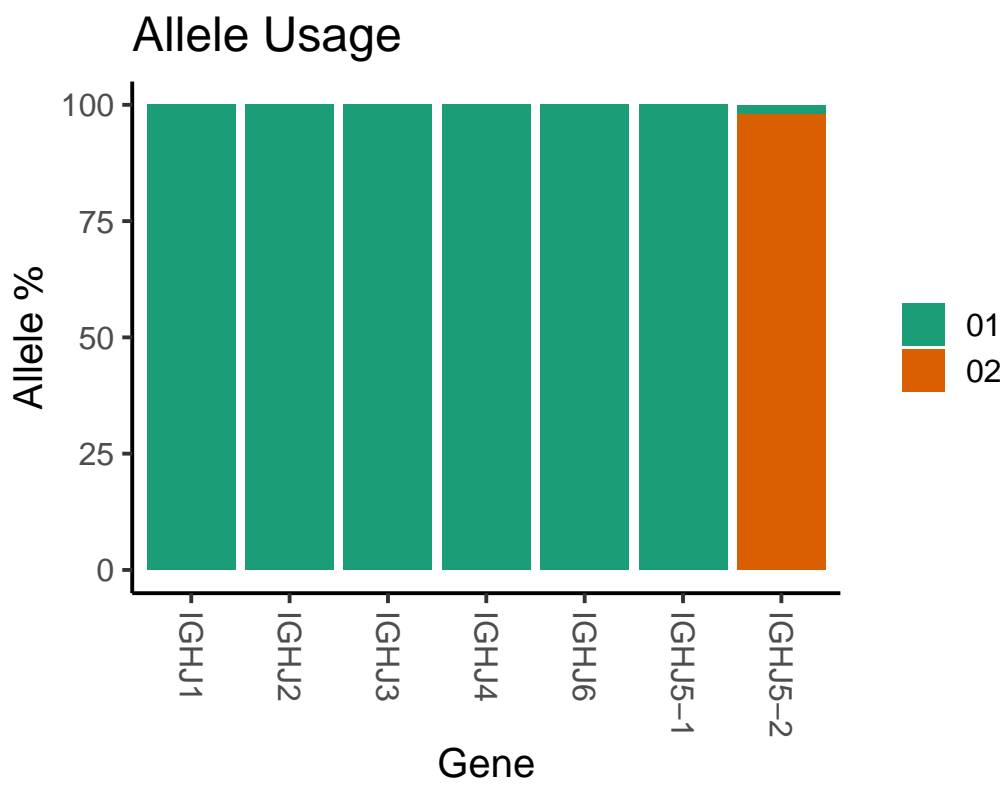


# IGHV7-135\*01\_S9086

23 sequences assigned  
5 (21.7%) exact matches, in which:  
5 unique CDR3  
2 unique J







Warning – no inferred sequences found.