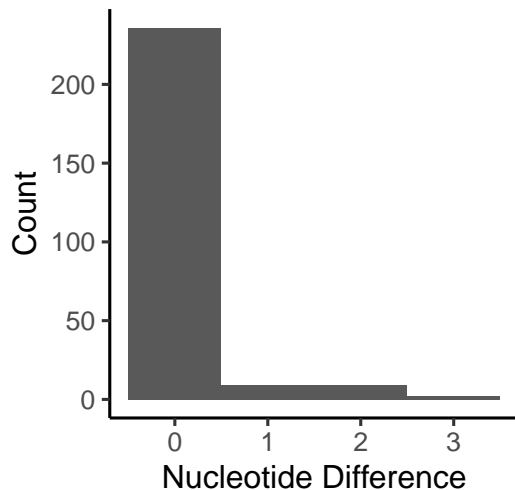


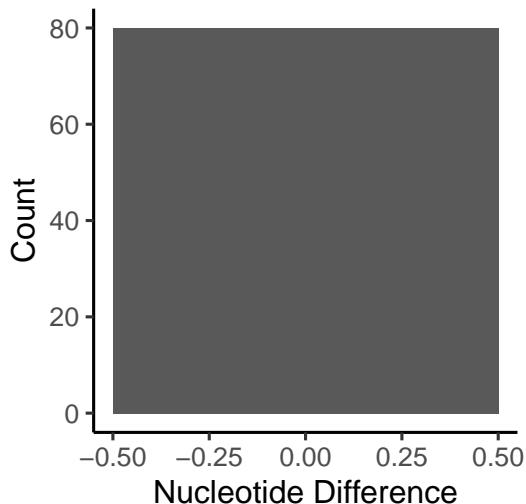
### IGHV1-2\*02

256 sequences assigned  
236 (92.2%) exact matches, in which:  
235 unique CDR3  
6 unique J



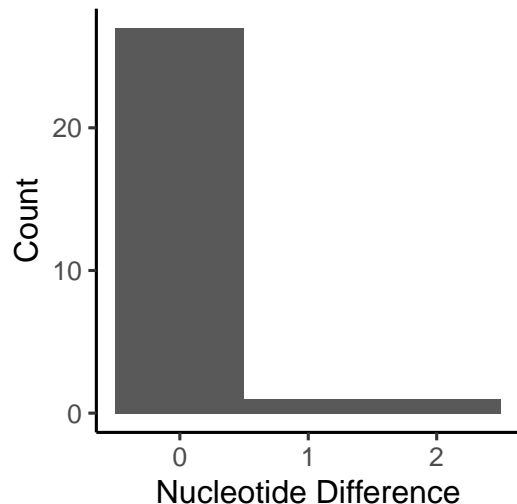
### IGHV1-24\*01

80 sequences assigned  
80 (100%) exact matches, in which:  
78 unique CDR3  
5 unique J



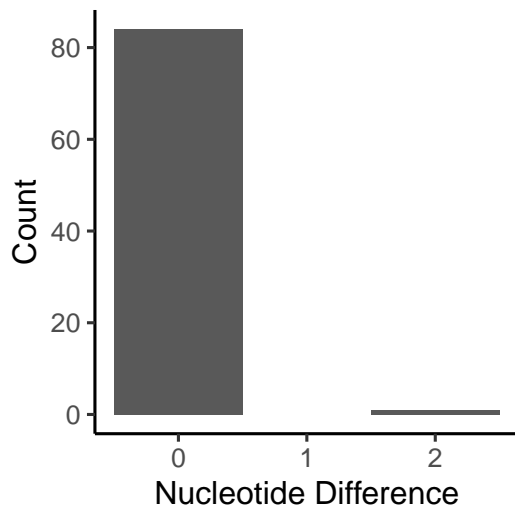
### IGHV1-58\*02

29 sequences assigned  
27 (93.1%) exact matches, in which:  
26 unique CDR3  
6 unique J



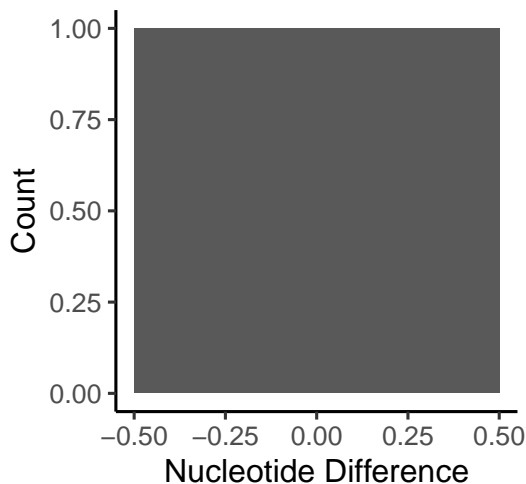
### IGHV1-3\*01\_05

85 sequences assigned  
84 (98.8%) exact matches, in which:  
83 unique CDR3  
6 unique J



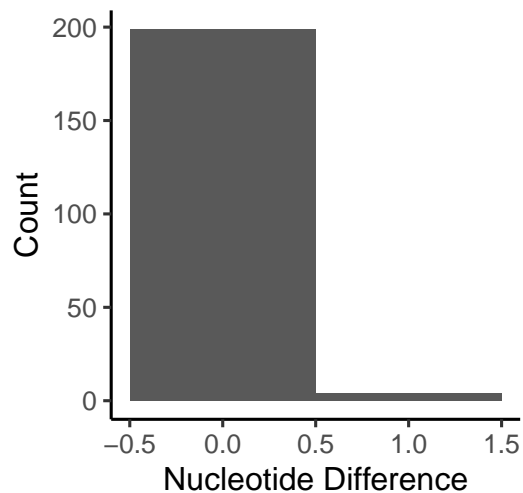
### IGHV1-45\*02

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



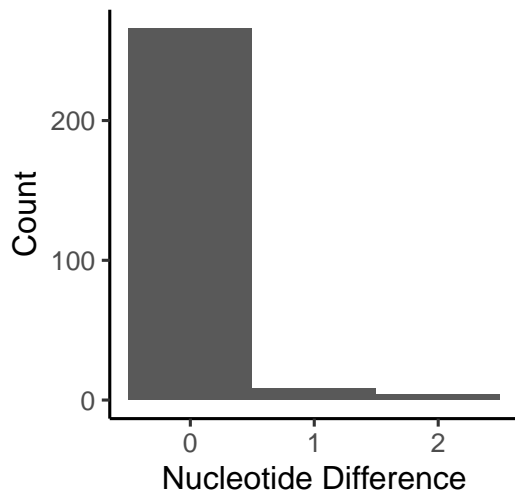
### IGHV1-69\*02

203 sequences assigned  
199 (98%) exact matches, in which:  
196 unique CDR3  
7 unique J



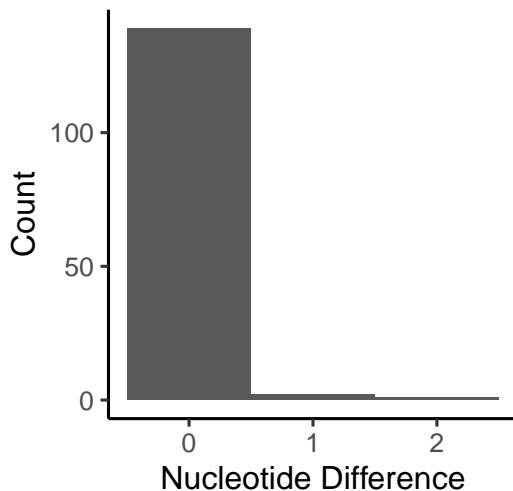
### IGHV1-18\*04

278 sequences assigned  
266 (95.7%) exact matches, in which:  
264 unique CDR3  
6 unique J



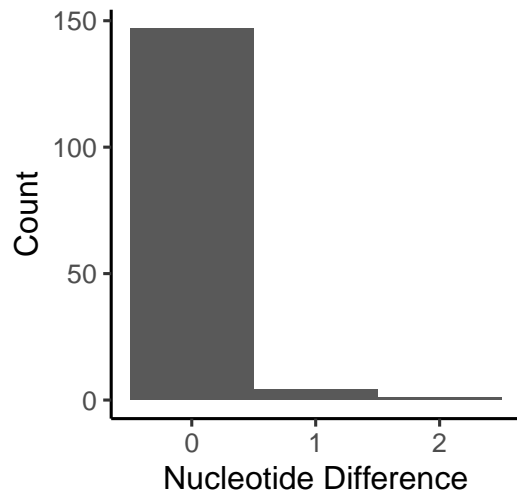
### IGHV1-46\*03

142 sequences assigned  
139 (97.9%) exact matches, in which:  
138 unique CDR3  
7 unique J



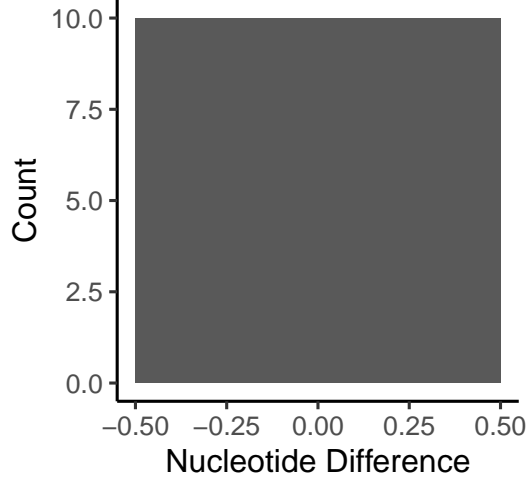
### IGHV2-5\*02

152 sequences assigned  
147 (96.7%) exact matches, in which:  
143 unique CDR3  
7 unique J



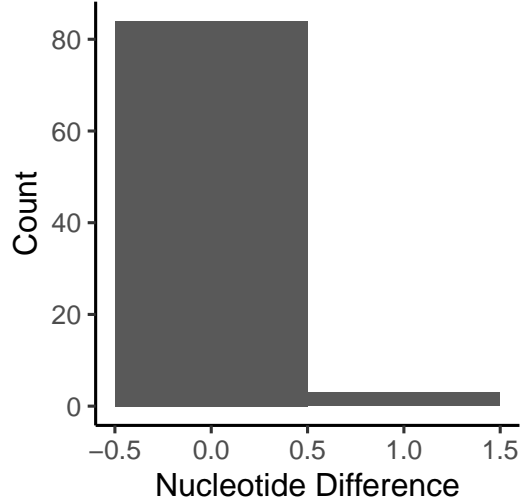
### IGHV2–26\*01

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



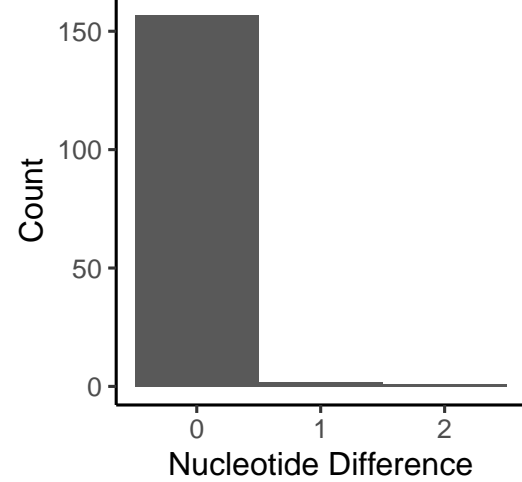
### IGHV3–7\*04

87 sequences assigned  
84 (96.6%) exact matches, in which:  
84 unique CDR3  
6 unique J



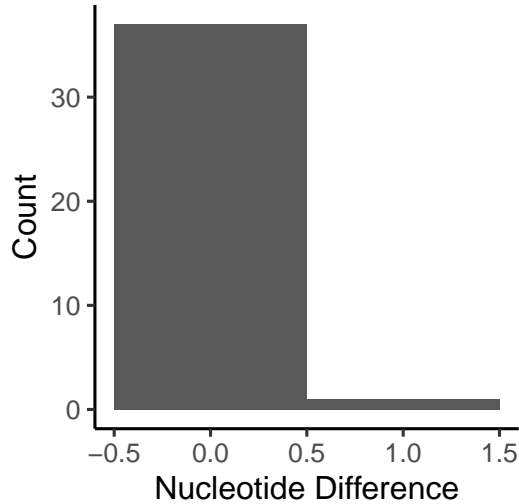
### IGHV3–15\*01\_02

160 sequences assigned  
157 (98.1%) exact matches, in which:  
155 unique CDR3  
5 unique J



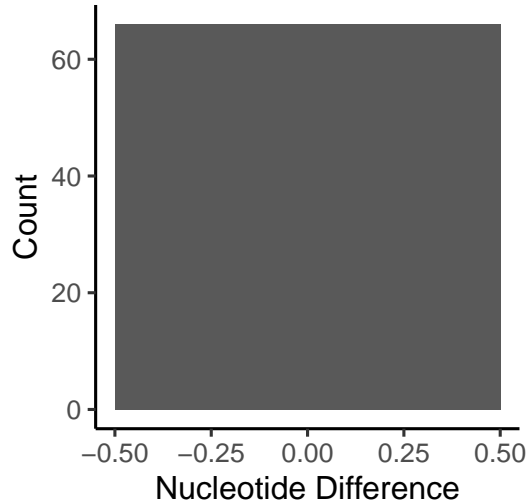
### IGHV2–70\*11\_15

38 sequences assigned  
37 (97.4%) exact matches, in which:  
37 unique CDR3  
4 unique J



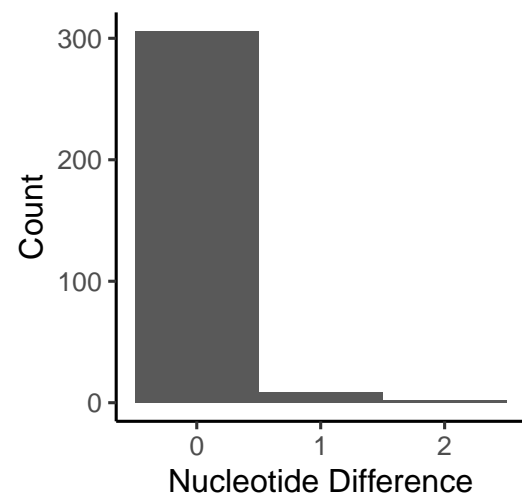
### IGHV3–11\*06

66 sequences assigned  
66 (100%) exact matches, in which:  
66 unique CDR3  
6 unique J



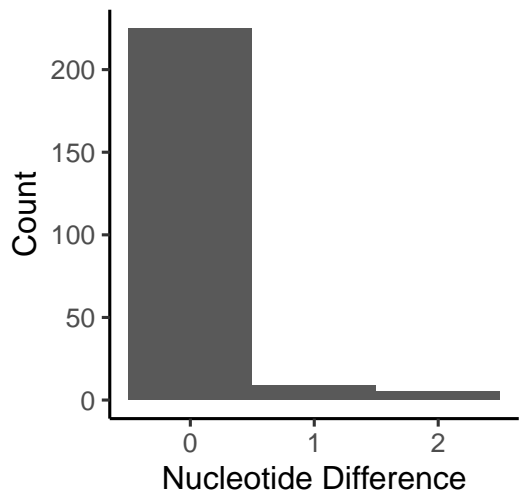
### IGHV3–21\*01\_02

317 sequences assigned  
306 (96.5%) exact matches, in which:  
296 unique CDR3  
7 unique J



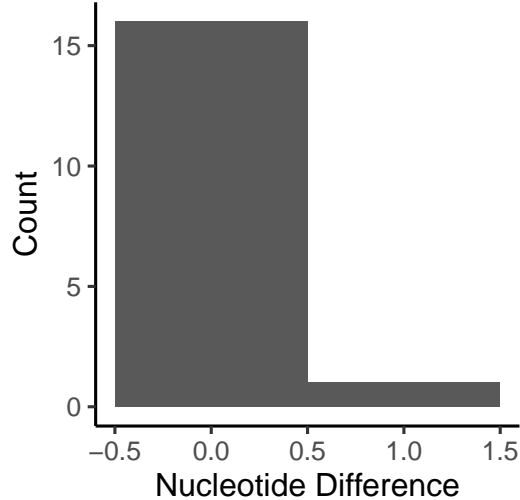
### IGHV3–7\*03

239 sequences assigned  
225 (94.1%) exact matches, in which:  
216 unique CDR3  
6 unique J



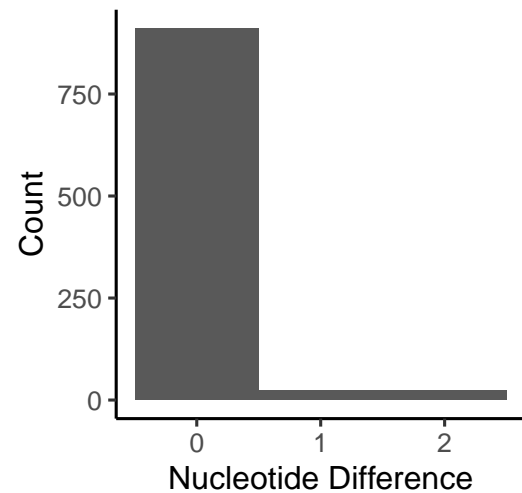
### IGHV3–13\*05

17 sequences assigned  
16 (94.1%) exact matches, in which:  
15 unique CDR3  
5 unique J



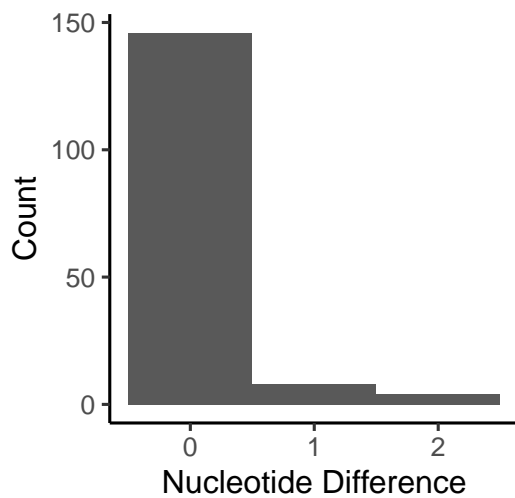
### IGHV3–23\*01\_04

957 sequences assigned  
911 (95.2%) exact matches, in which:  
878 unique CDR3  
7 unique J



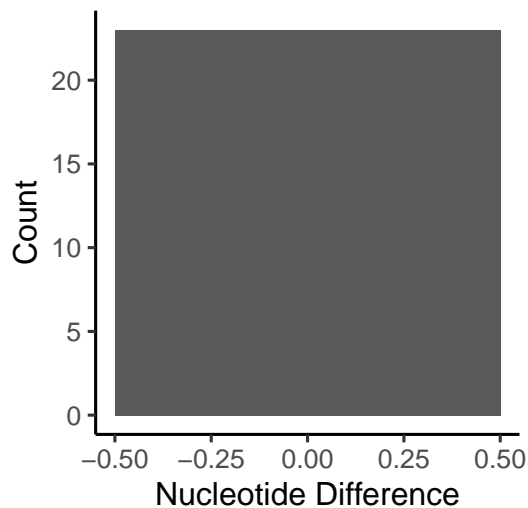
### IGHV3–33\*01

158 sequences assigned  
146 (92.4%) exact matches, in which:  
139 unique CDR3  
7 unique J



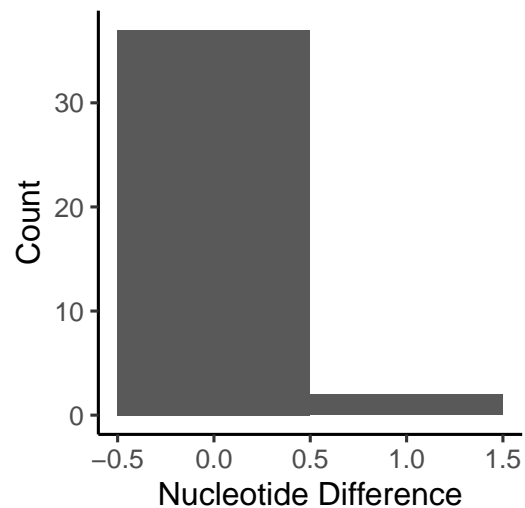
### IGHV3–43\*01

23 sequences assigned  
23 (100%) exact matches, in which:  
23 unique CDR3  
5 unique J



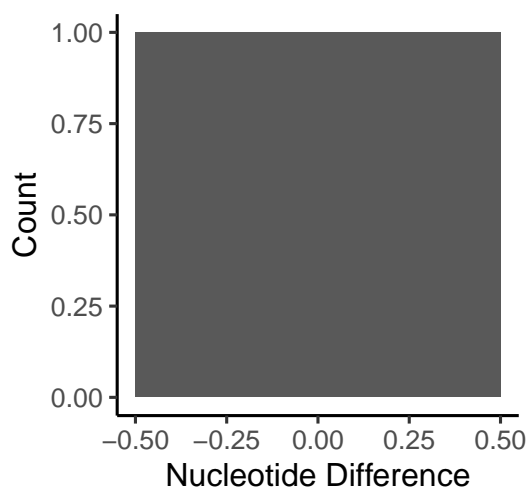
### IGHV3–49\*04

39 sequences assigned  
37 (94.9%) exact matches, in which:  
37 unique CDR3  
4 unique J



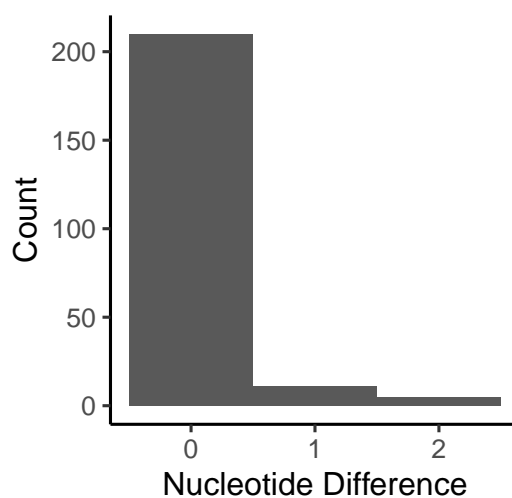
### IGHV3–35\*01

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



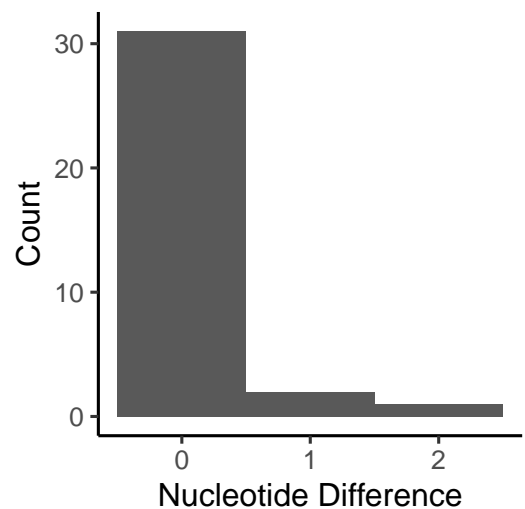
### IGHV3–48\*01

226 sequences assigned  
210 (92.9%) exact matches, in which:  
199 unique CDR3  
7 unique J



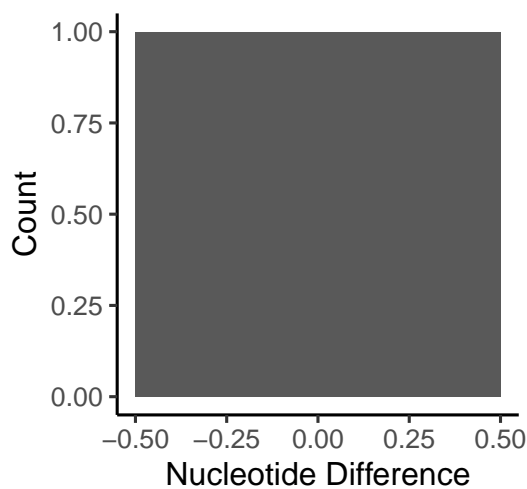
### IGHV3–49\*03\_05

34 sequences assigned  
31 (91.2%) exact matches, in which:  
31 unique CDR3  
5 unique J



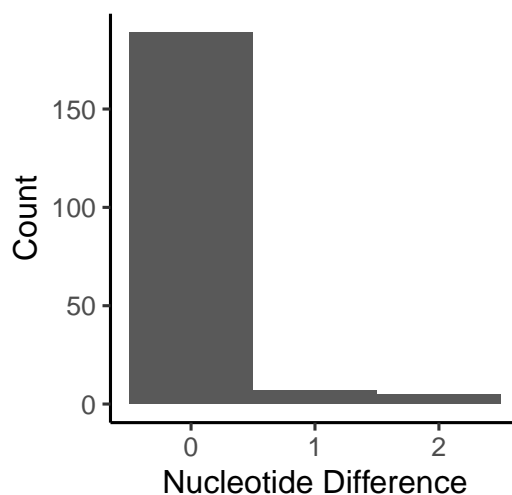
### IGHV3–38–3\*01

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



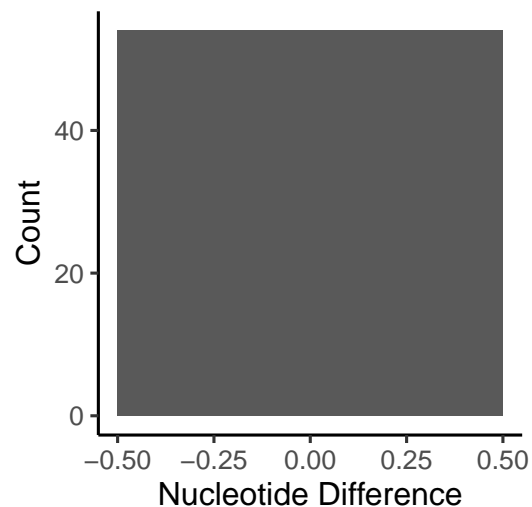
### IGHV3–48\*02

201 sequences assigned  
189 (94%) exact matches, in which:  
181 unique CDR3  
6 unique J



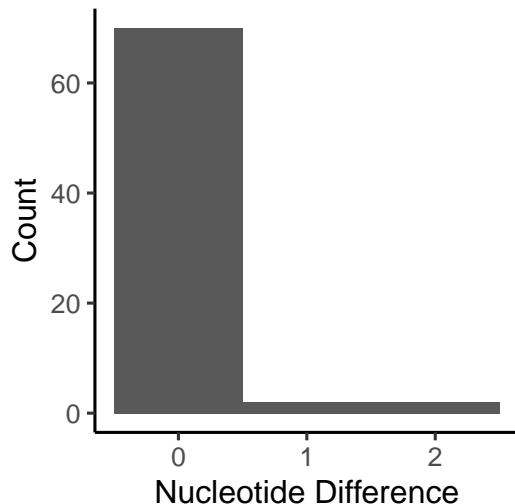
### IGHV3–53\*04

54 sequences assigned  
54 (100%) exact matches, in which:  
51 unique CDR3  
6 unique J



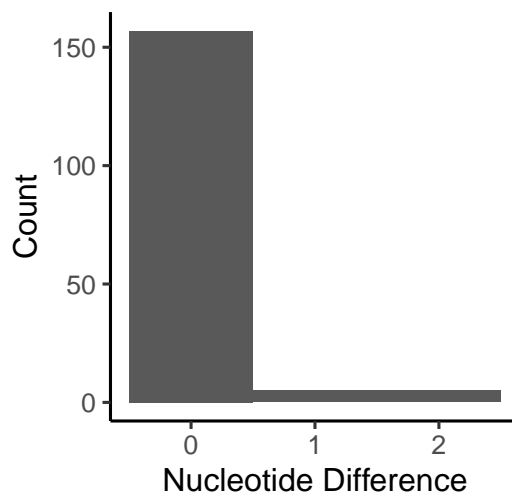
### IGHV3-53\*01\_02

74 sequences assigned  
70 (94.6%) exact matches, in which:  
70 unique CDR3  
5 unique J



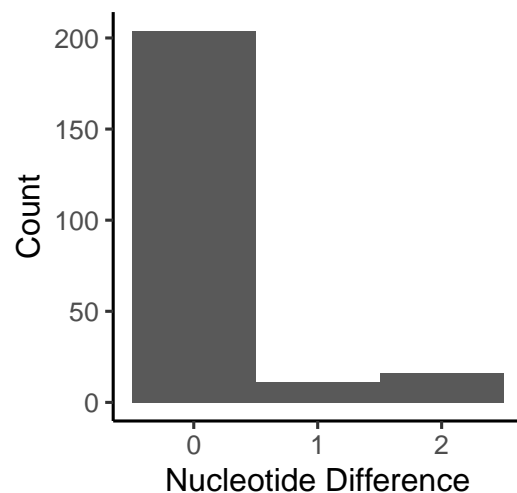
### IGHV3-66\*02

167 sequences assigned  
157 (94%) exact matches, in which:  
151 unique CDR3  
6 unique J



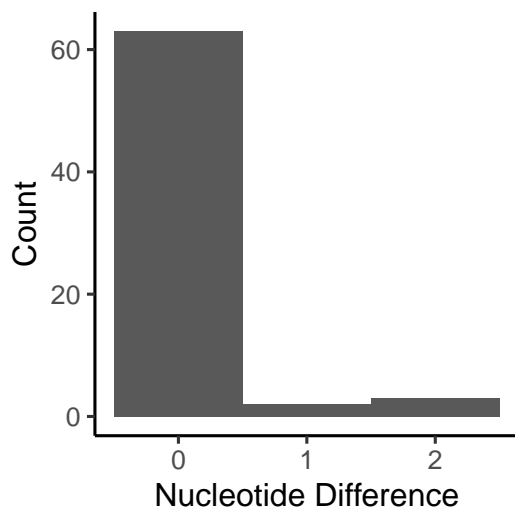
### IGHV3-74\*01\_02

231 sequences assigned  
204 (88.3%) exact matches, in which:  
194 unique CDR3  
7 unique J



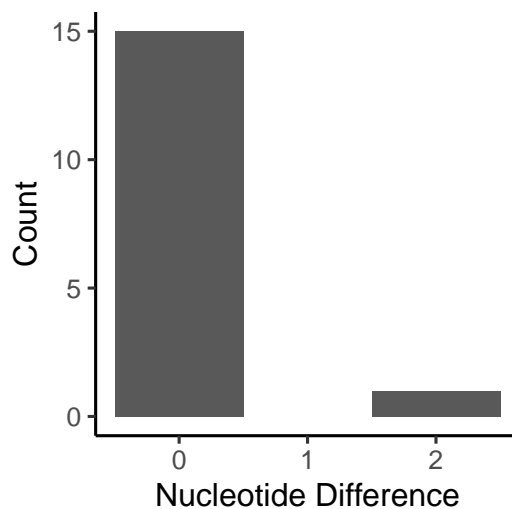
### IGHV3-64\*01

68 sequences assigned  
63 (92.6%) exact matches, in which:  
60 unique CDR3  
5 unique J



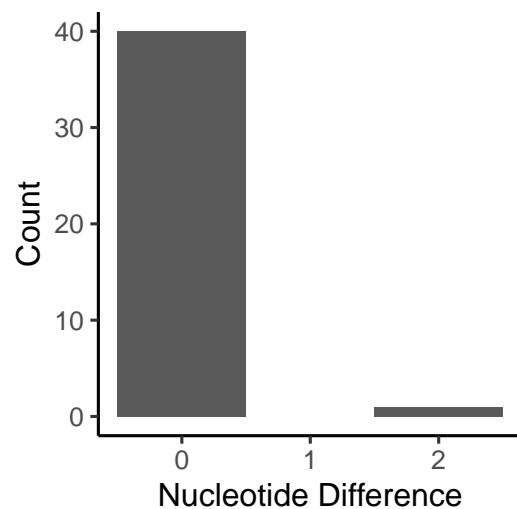
### IGHV3-72\*01

16 sequences assigned  
15 (93.8%) exact matches, in which:  
15 unique CDR3  
6 unique J



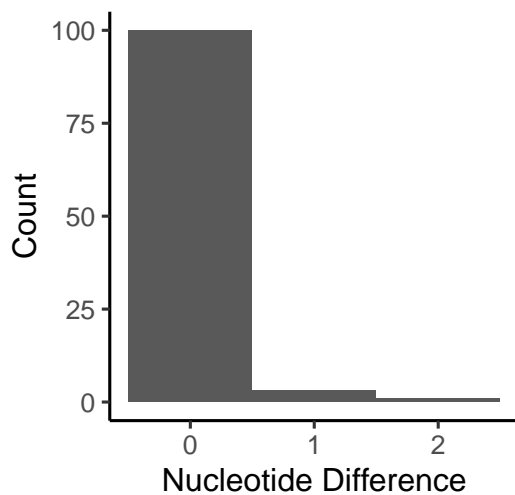
### IGHV3-43D\*03

41 sequences assigned  
40 (97.6%) exact matches, in which:  
39 unique CDR3  
5 unique J



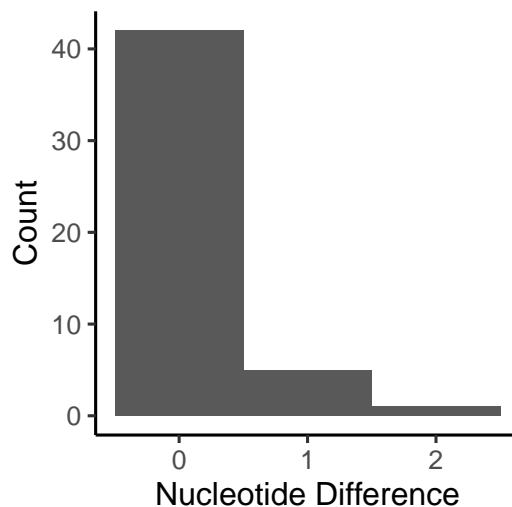
### IGHV3-66\*01

104 sequences assigned  
100 (96.2%) exact matches, in which:  
97 unique CDR3  
5 unique J



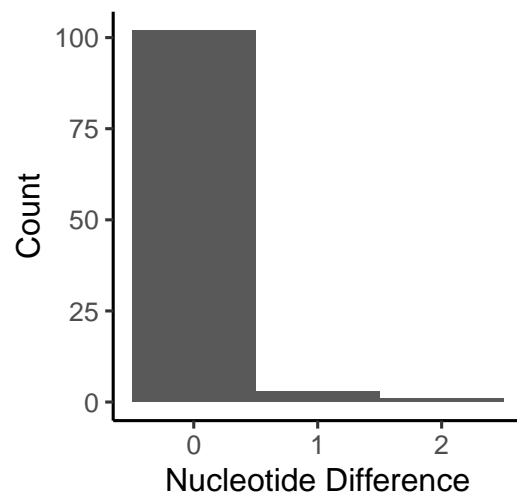
### IGHV3-73\*01\_02

48 sequences assigned  
42 (87.5%) exact matches, in which:  
38 unique CDR3  
7 unique J



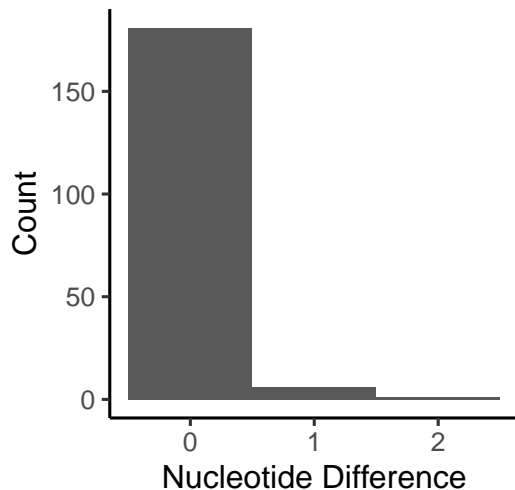
### IGHV3-64D\*06

106 sequences assigned  
102 (96.2%) exact matches, in which:  
101 unique CDR3  
6 unique J



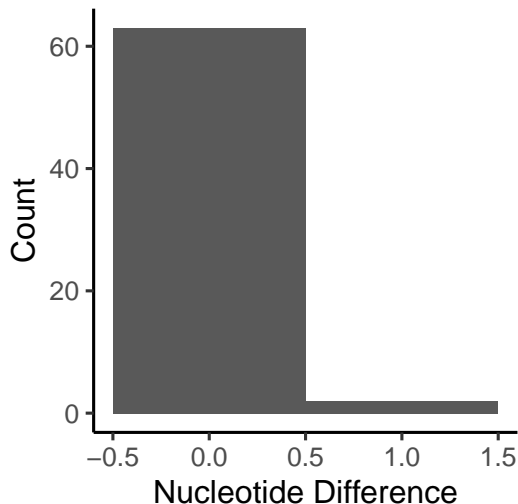
### IGHV4-4\*02\_03

188 sequences assigned  
181 (96.3%) exact matches, in which:  
177 unique CDR3  
6 unique J



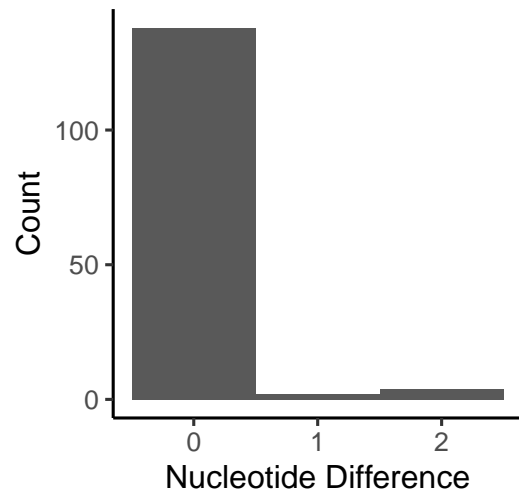
### IGHV4-30-4\*07

65 sequences assigned  
63 (96.9%) exact matches, in which:  
63 unique CDR3  
5 unique J



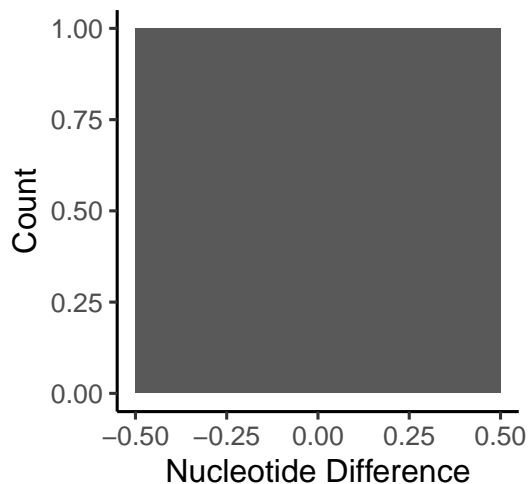
### IGHV4-38-2\*02

144 sequences assigned  
138 (95.8%) exact matches, in which:  
135 unique CDR3  
6 unique J



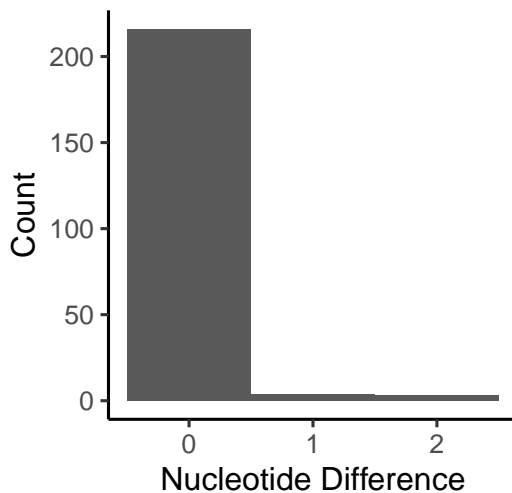
### IGHV4-28\*01\_07

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



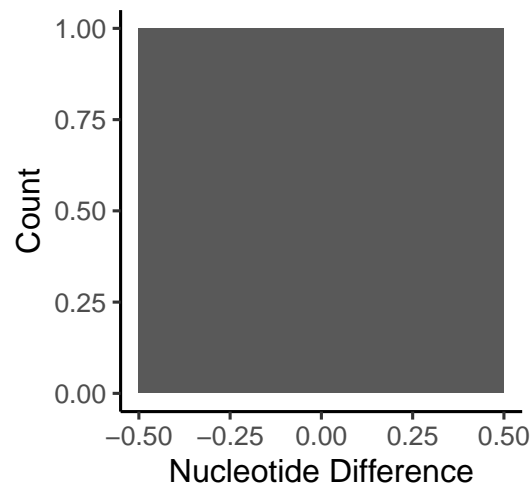
### IGHV4-31\*02

223 sequences assigned  
216 (96.9%) exact matches, in which:  
209 unique CDR3  
5 unique J



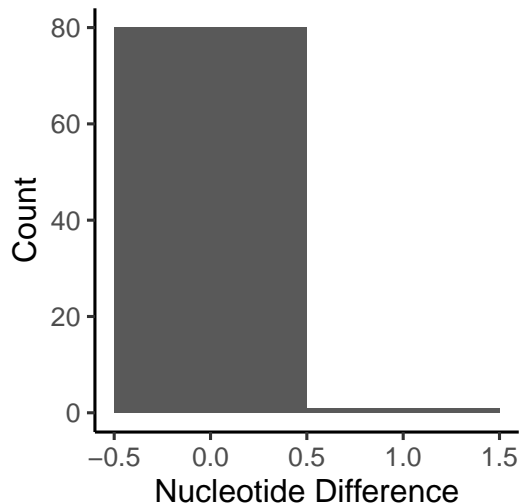
### IGHV4-39\*01\_05

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



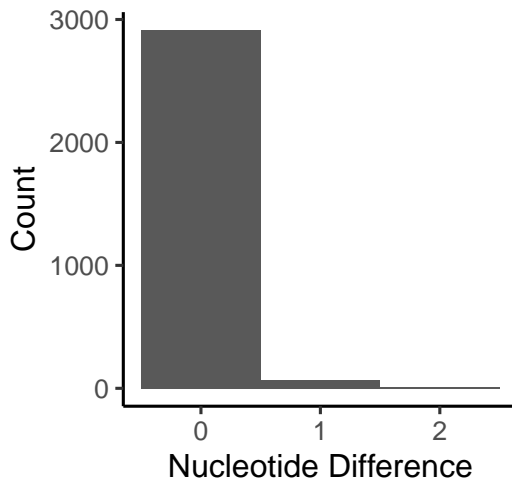
### IGHV4-30-2\*01

81 sequences assigned  
80 (98.8%) exact matches, in which:  
77 unique CDR3  
6 unique J



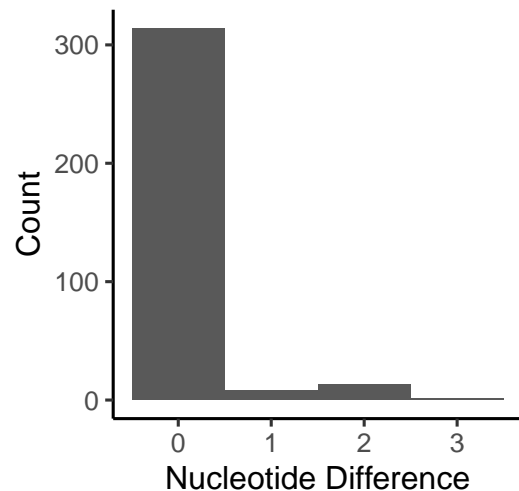
### IGHV4-34\*01\_02

2996 sequences assigned  
2914 (97.3%) exact matches, in which:  
2787 unique CDR3  
7 unique J



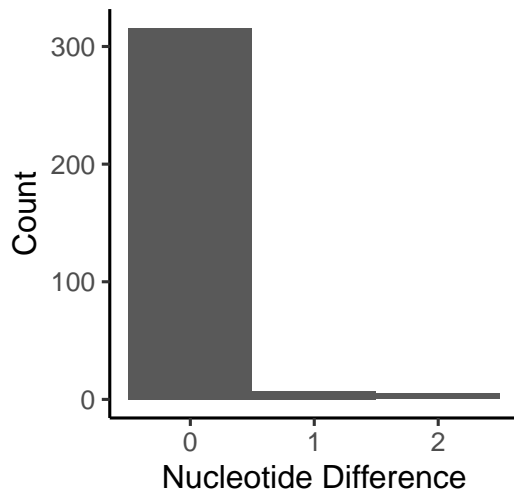
### IGHV4-59\*08

336 sequences assigned  
314 (93.5%) exact matches, in which:  
304 unique CDR3  
6 unique J



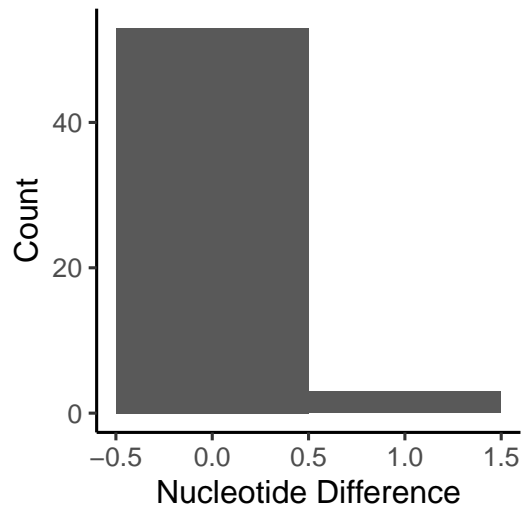
### IGHV4–61\*02

328 sequences assigned  
316 (96.3%) exact matches, in which:  
309 unique CDR3  
6 unique J



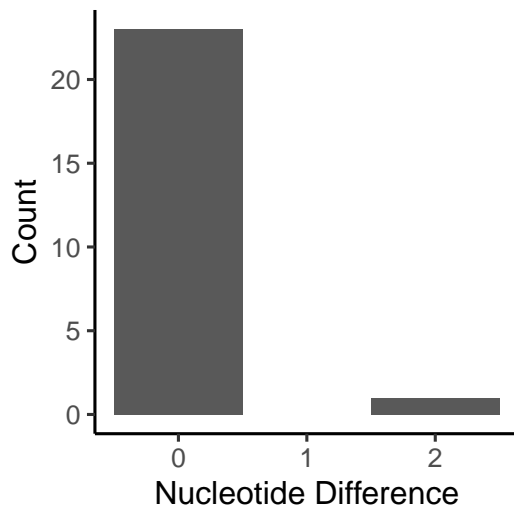
### IGHV7–4–1\*02

56 sequences assigned  
53 (94.6%) exact matches, in which:  
53 unique CDR3  
5 unique J



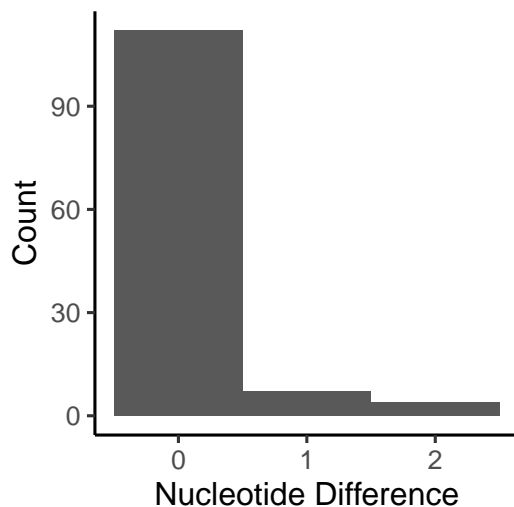
### IGHV5–10–1\*01\_03

24 sequences assigned  
23 (95.8%) exact matches, in which:  
23 unique CDR3  
3 unique J

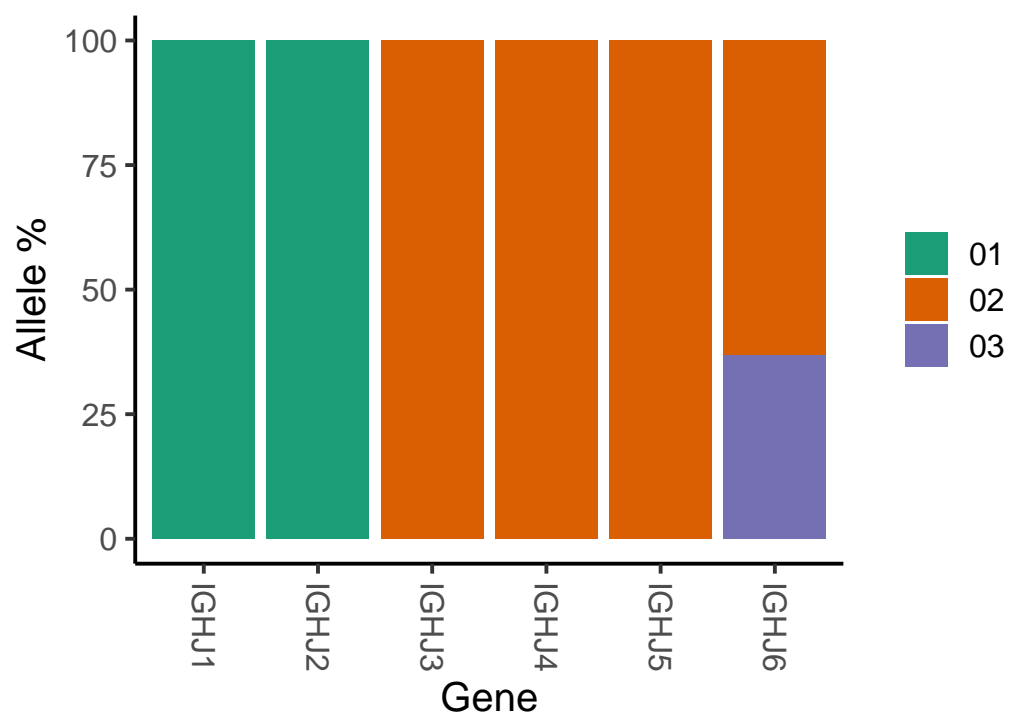


### IGHV6–1\*01\_02

123 sequences assigned  
112 (91.1%) exact matches, in which:  
111 unique CDR3  
6 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage





[illegible]