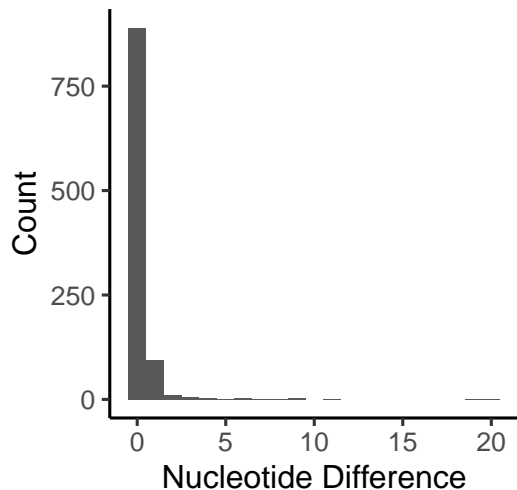


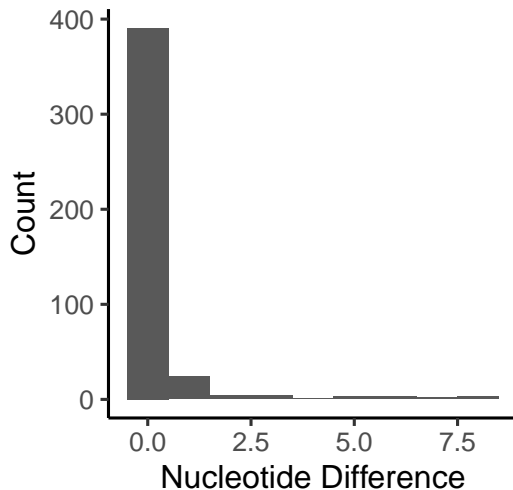
### IGHV1-2\*02

1018 sequences assigned  
890 (87.4%) exact matches, in which:  
851 unique CDR3  
6 unique J



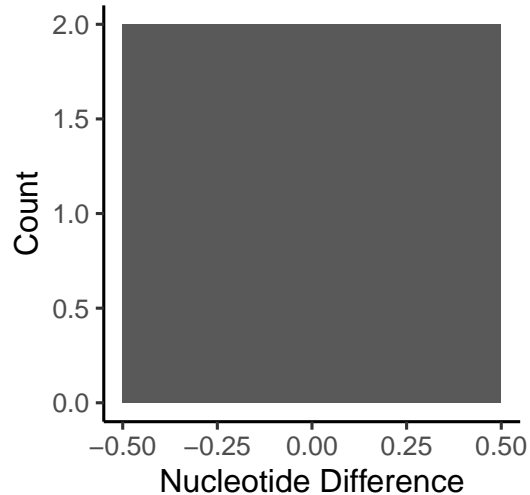
### IGHV1-8\*01

435 sequences assigned  
391 (89.9%) exact matches, in which:  
376 unique CDR3  
6 unique J



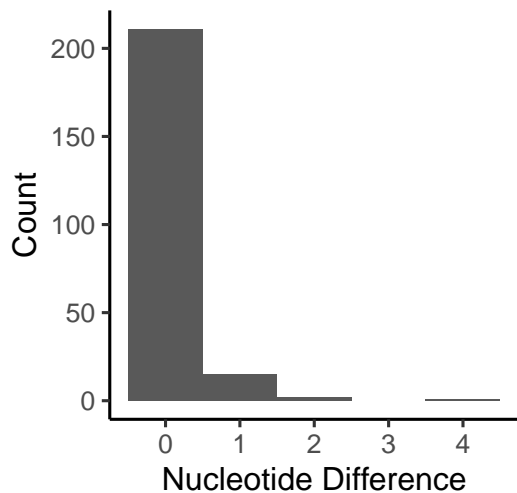
### IGHV1-45\*02

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



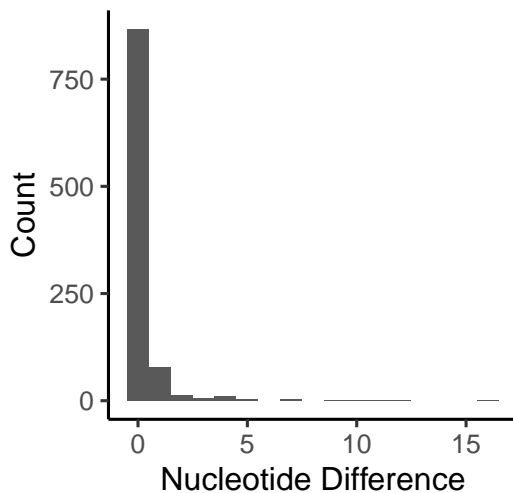
### IGHV1-2\*04

229 sequences assigned  
211 (92.1%) exact matches, in which:  
199 unique CDR3  
6 unique J



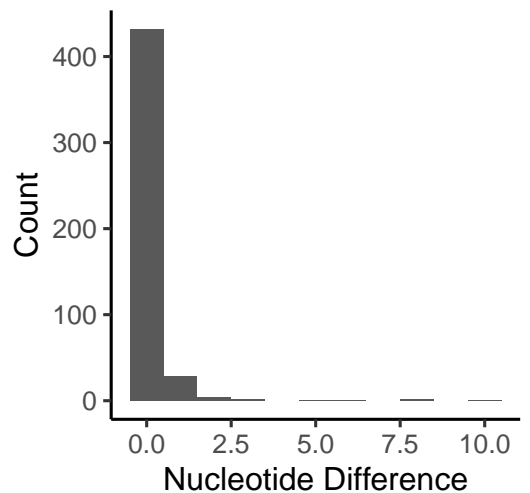
### IGHV1-18\*01

992 sequences assigned  
867 (87.4%) exact matches, in which:  
837 unique CDR3  
6 unique J



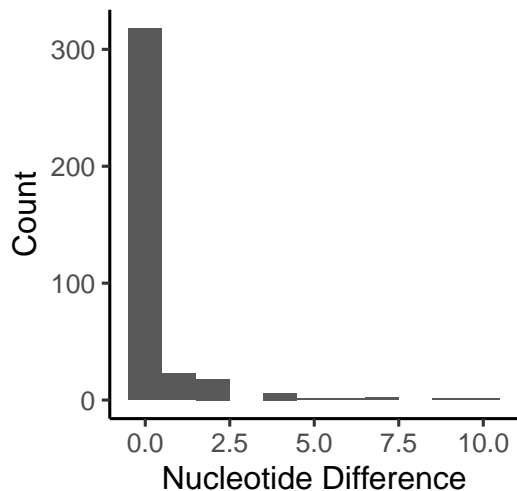
### IGHV1-46\*01

472 sequences assigned  
432 (91.5%) exact matches, in which:  
419 unique CDR3  
6 unique J



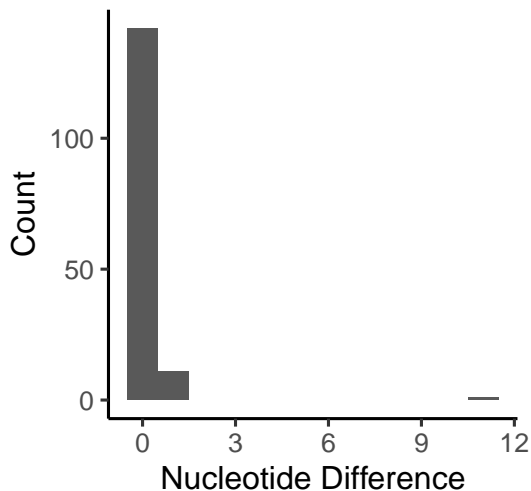
### IGHV1-3\*01

371 sequences assigned  
318 (85.7%) exact matches, in which:  
309 unique CDR3  
6 unique J



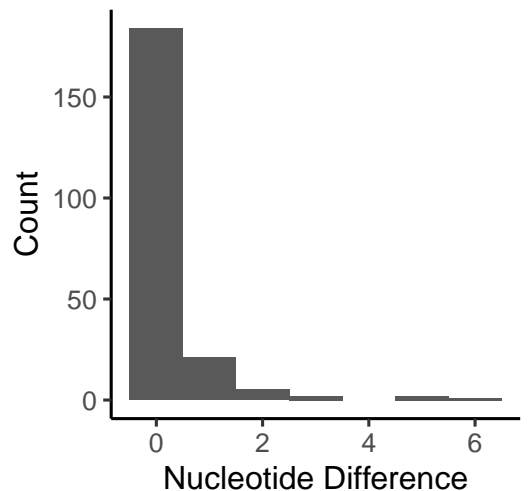
### IGHV1-24\*01

154 sequences assigned  
142 (92.2%) exact matches, in which:  
138 unique CDR3  
6 unique J



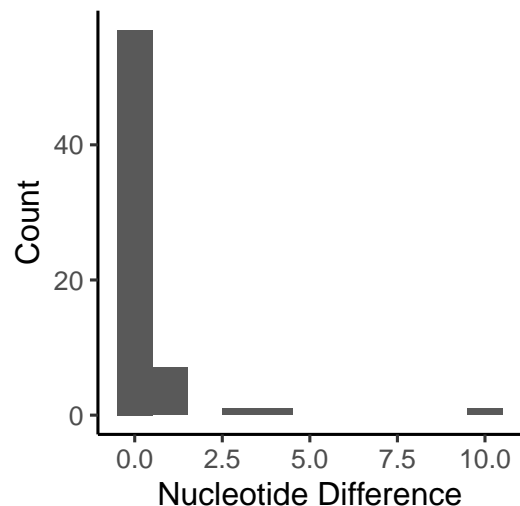
### IGHV1-46\*03

215 sequences assigned  
184 (85.6%) exact matches, in which:  
179 unique CDR3  
6 unique J



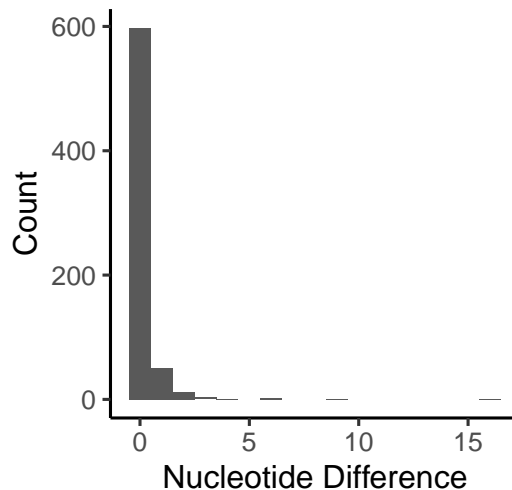
### IGHV1-58\*01

67 sequences assigned  
57 (85.1%) exact matches, in which:  
56 unique CDR3  
6 unique J



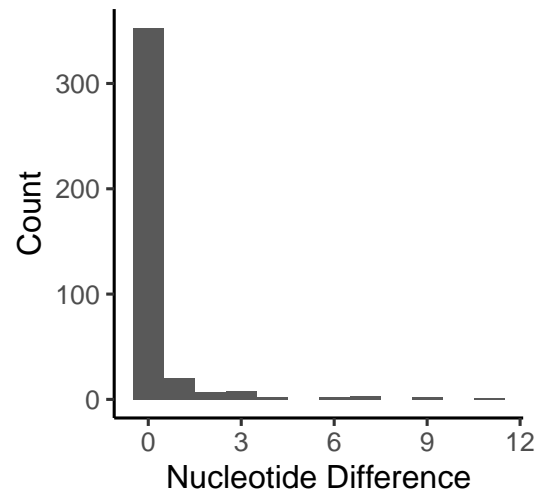
### IGHV1-69\*06

669 sequences assigned  
598 (89.4%) exact matches, in which:  
575 unique CDR3  
6 unique J



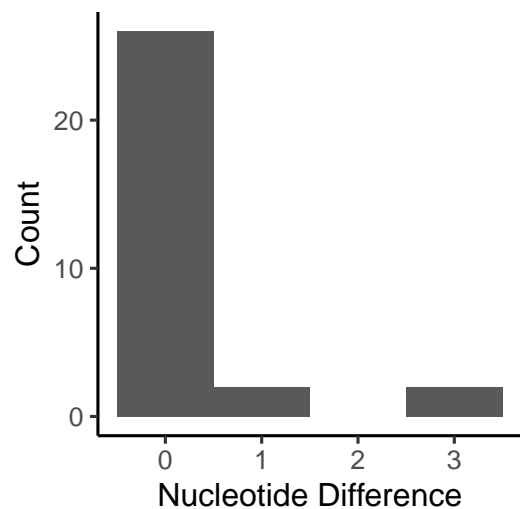
### IGHV2-5\*02

398 sequences assigned  
353 (88.7%) exact matches, in which:  
344 unique CDR3  
6 unique J



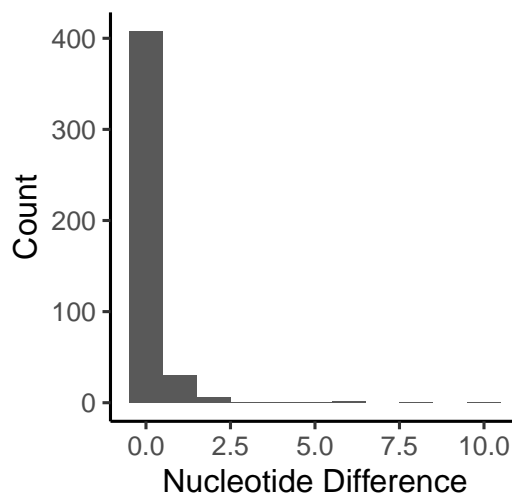
### IGHV1-58\*02

30 sequences assigned  
26 (86.7%) exact matches, in which:  
26 unique CDR3  
4 unique J



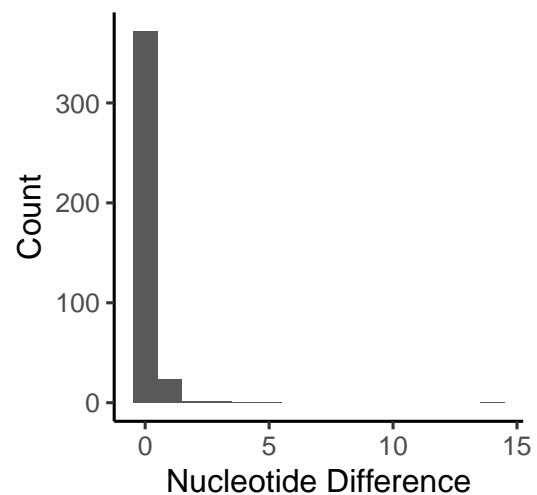
### IGHV1-69\*08\_C191T

451 sequences assigned  
408 (90.5%) exact matches, in which:  
384 unique CDR3  
6 unique J



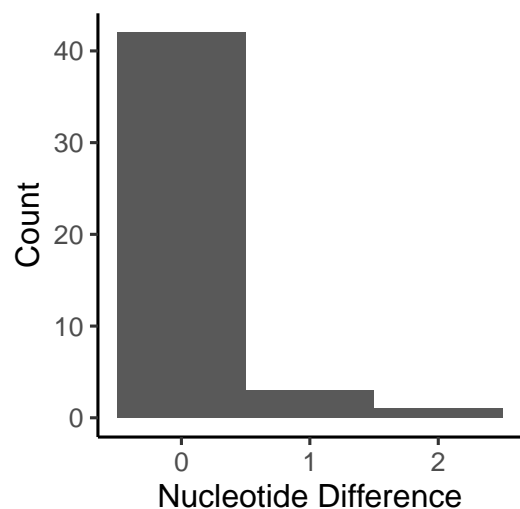
### IGHV2-26\*01

403 sequences assigned  
372 (92.3%) exact matches, in which:  
361 unique CDR3  
6 unique J



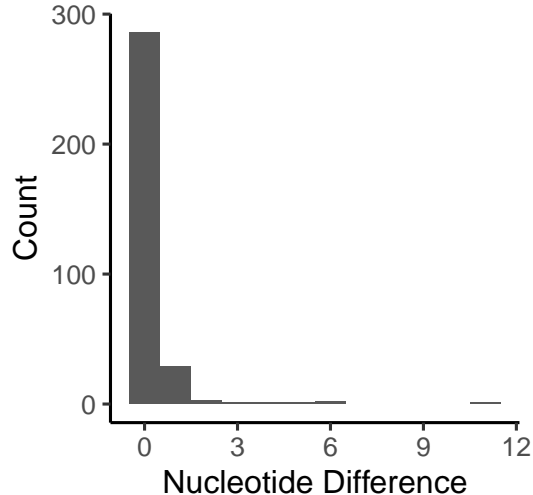
### IGHV1-69-2\*01

46 sequences assigned  
42 (91.3%) exact matches, in which:  
42 unique CDR3  
6 unique J



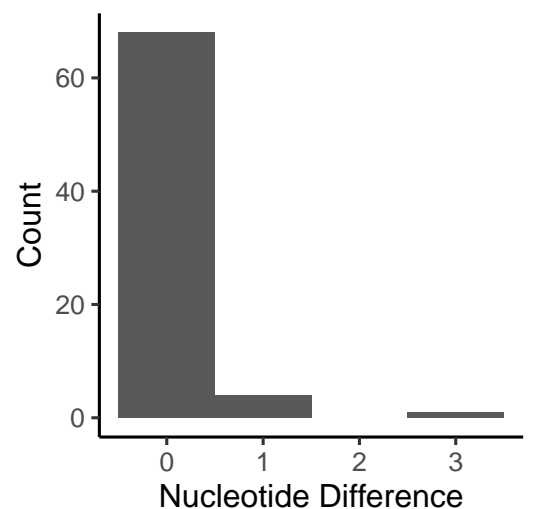
### IGHV2-5\*01

324 sequences assigned  
286 (88.3%) exact matches, in which:  
279 unique CDR3  
6 unique J



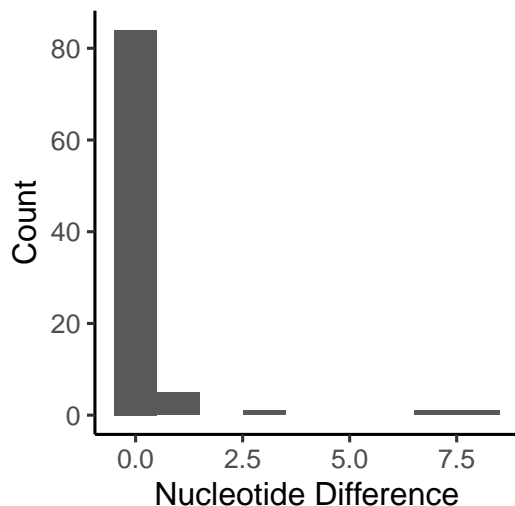
### IGHV2-70\*01

73 sequences assigned  
68 (93.2%) exact matches, in which:  
68 unique CDR3  
5 unique J



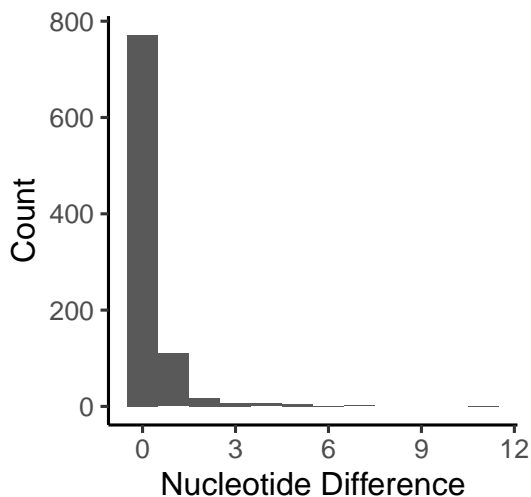
## IGHV2-70\*15

92 sequences assigned  
84 (91.3%) exact matches, in which:  
83 unique CDR3  
5 unique J



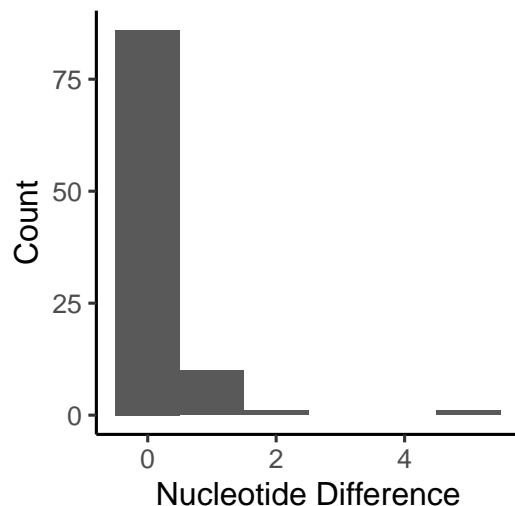
## IGHV3-9\*01

922 sequences assigned  
772 (83.7%) exact matches, in which:  
718 unique CDR3  
6 unique J



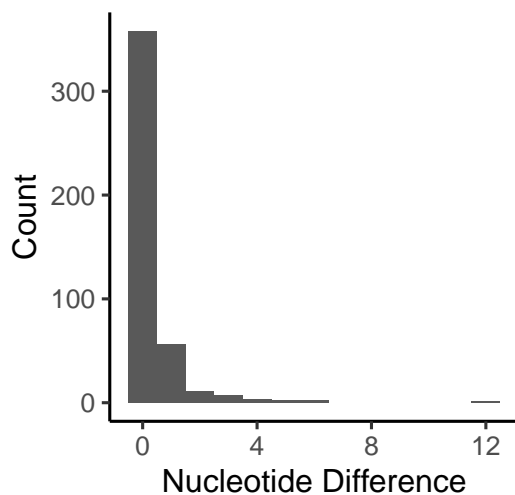
## IGHV3-13\*01

99 sequences assigned  
86 (86.9%) exact matches, in which:  
80 unique CDR3  
5 unique J



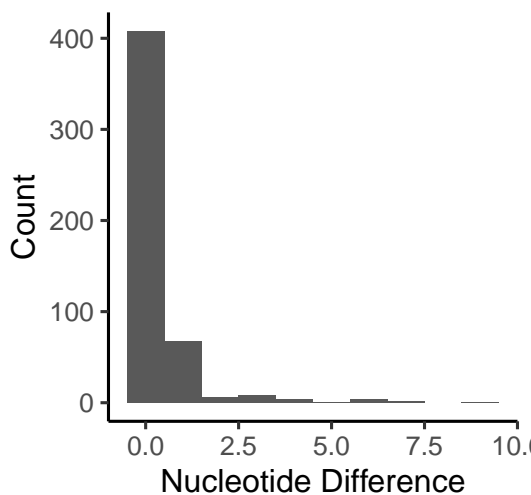
## IGHV3-7\*01

440 sequences assigned  
358 (81.4%) exact matches, in which:  
339 unique CDR3  
6 unique J



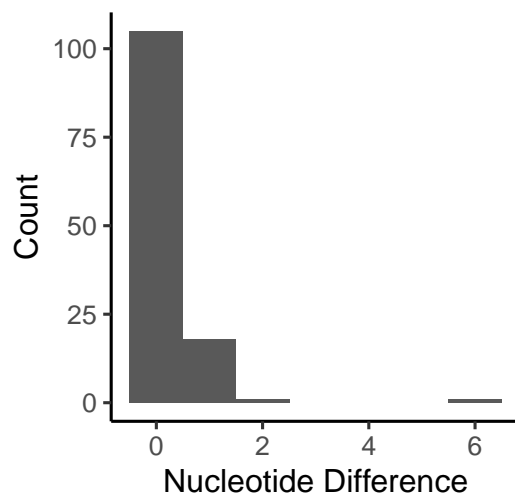
## IGHV3-11\*01

502 sequences assigned  
408 (81.3%) exact matches, in which:  
393 unique CDR3  
6 unique J



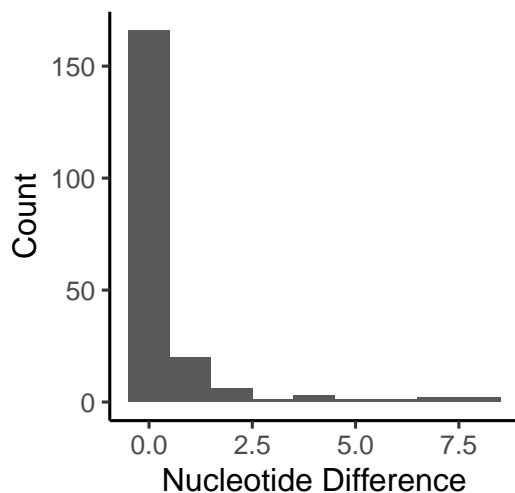
## IGHV3-13\*04

125 sequences assigned  
105 (84%) exact matches, in which:  
99 unique CDR3  
6 unique J



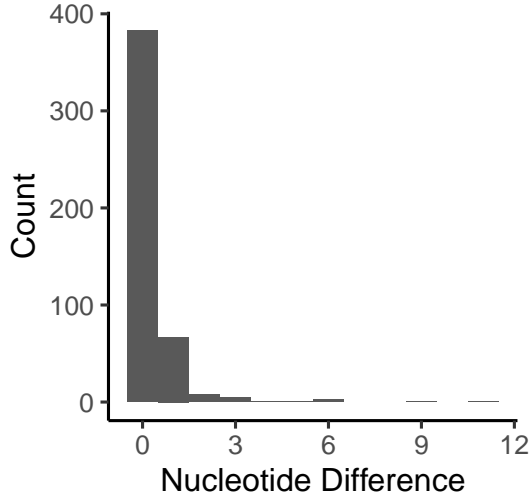
## IGHV3-7\*04

202 sequences assigned  
166 (82.2%) exact matches, in which:  
158 unique CDR3  
6 unique J



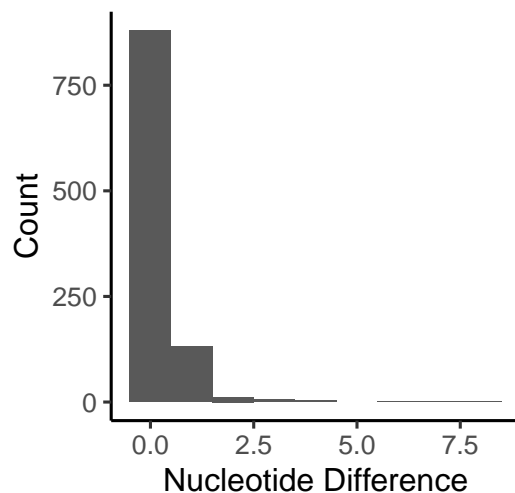
## IGHV3-11\*05

470 sequences assigned  
383 (81.5%) exact matches, in which:  
362 unique CDR3  
6 unique J



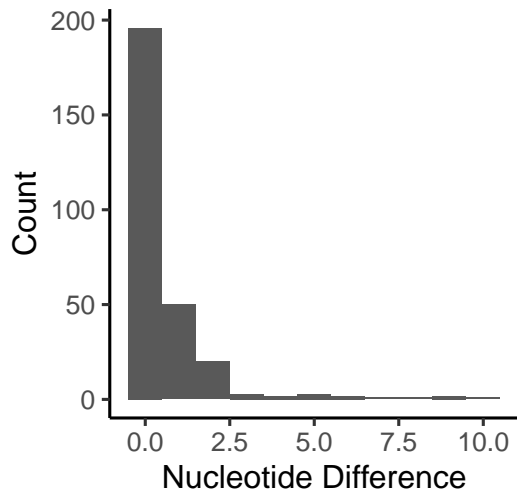
## IGHV3-15\*01

1038 sequences assigned  
880 (84.8%) exact matches, in which:  
831 unique CDR3  
6 unique J



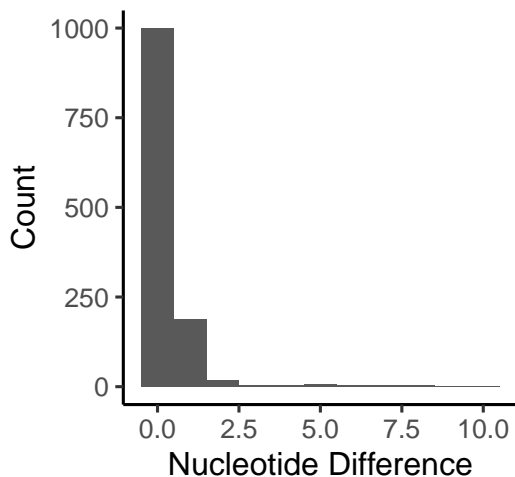
### IGHV3–20\*04

282 sequences assigned  
196 (69.5%) exact matches, in which:  
180 unique CDR3  
6 unique J



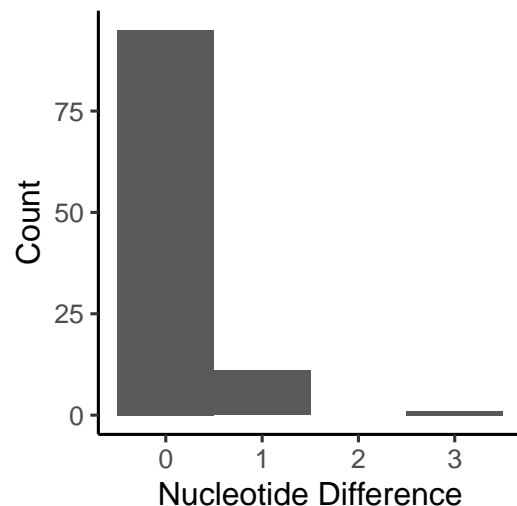
### IGHV3–33\*01

1237 sequences assigned  
999 (80.8%) exact matches, in which:  
946 unique CDR3  
6 unique J



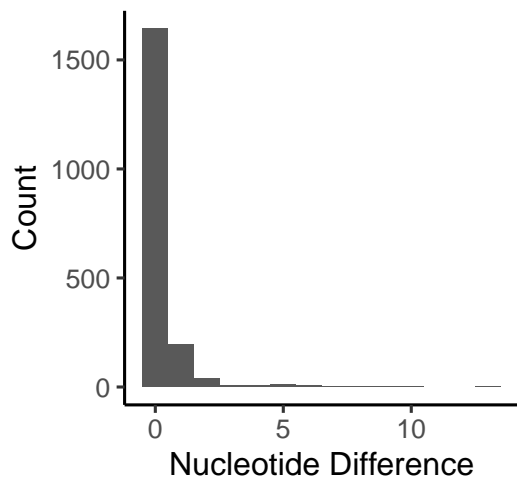
### IGHV3–43\*01

107 sequences assigned  
95 (88.8%) exact matches, in which:  
91 unique CDR3  
6 unique J



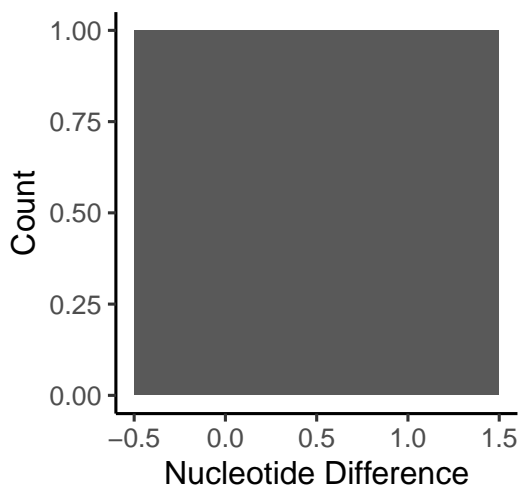
### IGHV3–21\*01

1925 sequences assigned  
1643 (85.4%) exact matches, in which:  
1548 unique CDR3  
6 unique J



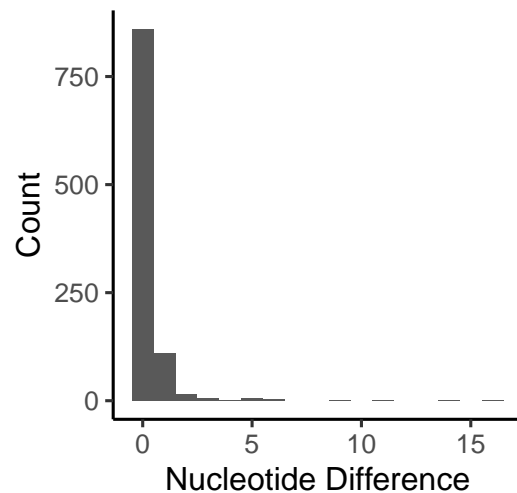
### IGHV3–35\*01

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



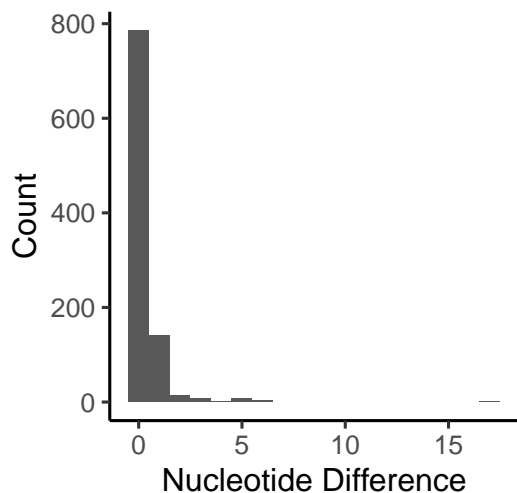
### IGHV3–48\*02

1006 sequences assigned  
860 (85.5%) exact matches, in which:  
803 unique CDR3  
6 unique J



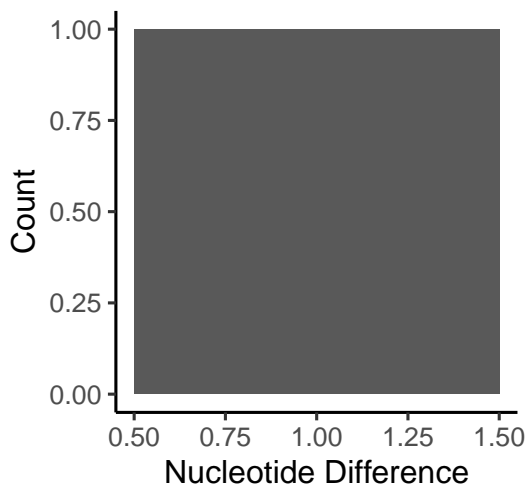
### IGHV3–30–3\*01

962 sequences assigned  
786 (81.7%) exact matches, in which:  
741 unique CDR3  
6 unique J



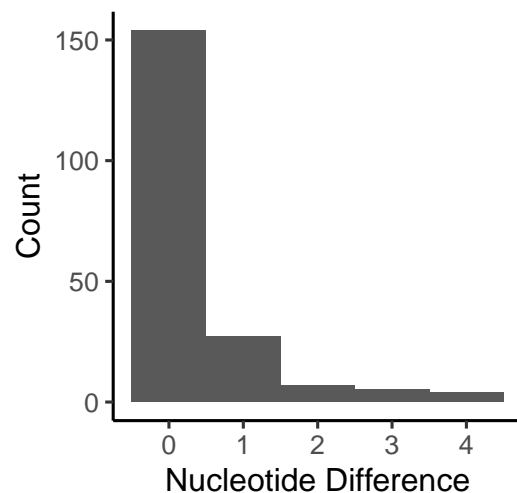
### IGHV3–38–3\*01

1 sequences assigned  
No exact matches.



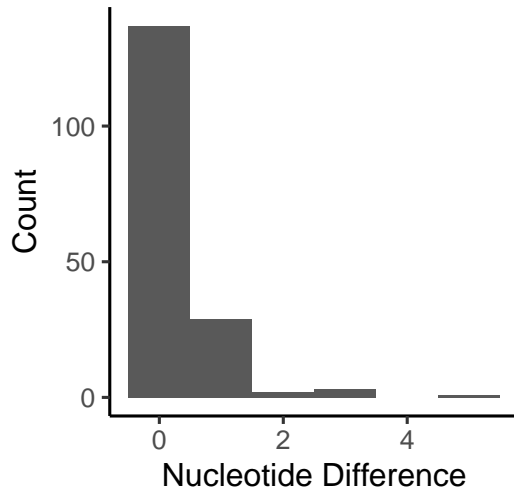
### IGHV3–49\*04

197 sequences assigned  
154 (78.2%) exact matches, in which:  
149 unique CDR3  
6 unique J



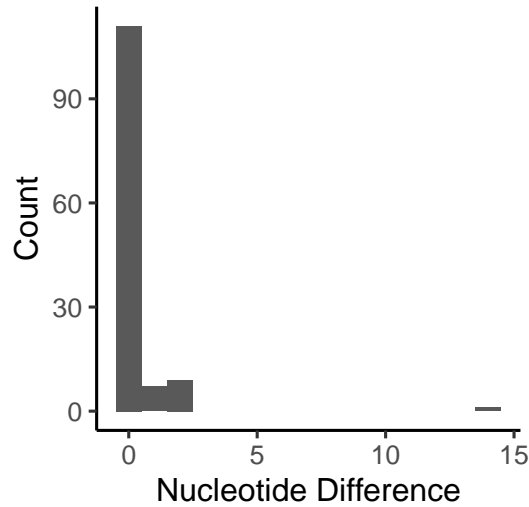
### IGHV3-49\*05

172 sequences assigned  
137 (79.7%) exact matches, in which:  
133 unique CDR3  
6 unique J



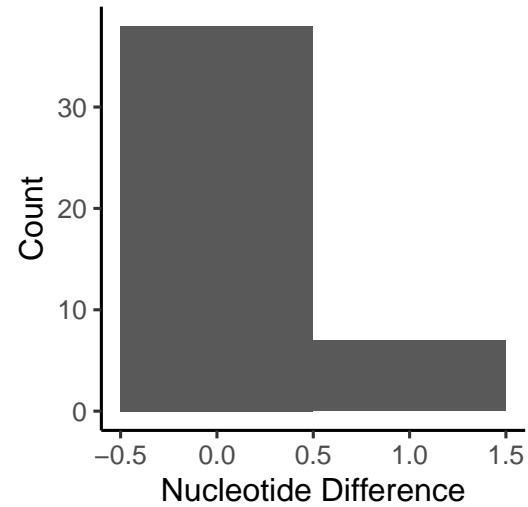
### IGHV3-64\*01

128 sequences assigned  
111 (86.7%) exact matches, in which:  
102 unique CDR3  
5 unique J



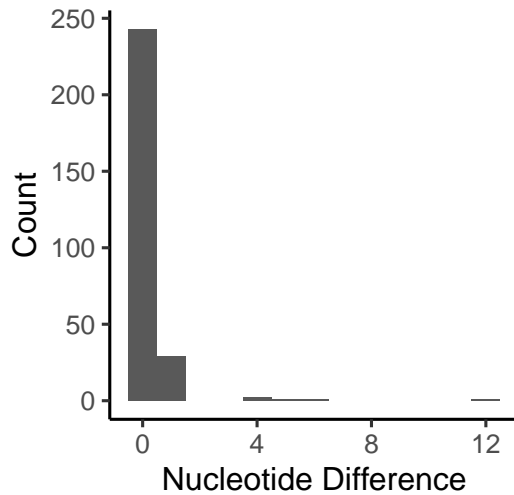
### IGHV3-72\*01

45 sequences assigned  
38 (84.4%) exact matches, in which:  
38 unique CDR3  
5 unique J



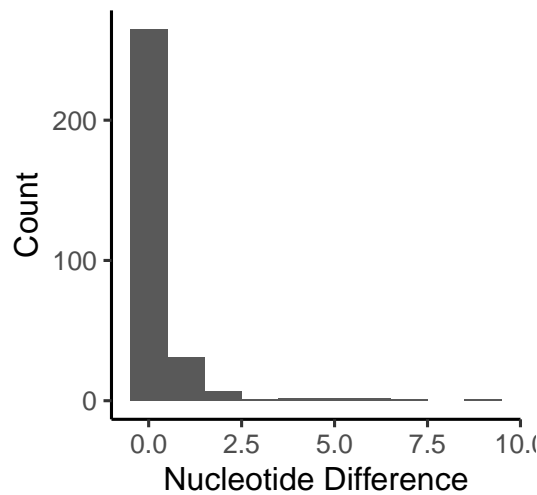
### IGHV3-53\*01

277 sequences assigned  
243 (87.7%) exact matches, in which:  
231 unique CDR3  
6 unique J



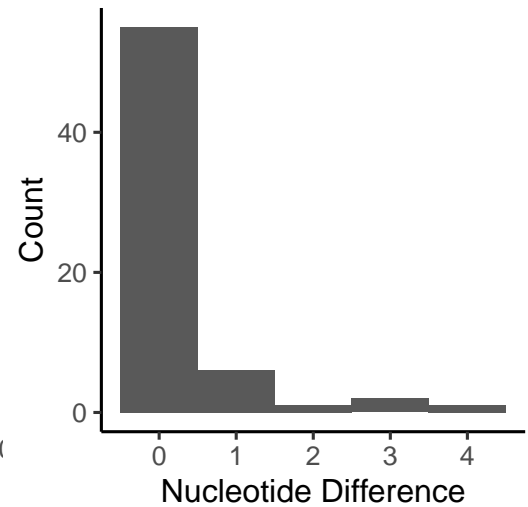
### IGHV3-66\*01

312 sequences assigned  
265 (84.9%) exact matches, in which:  
246 unique CDR3  
6 unique J



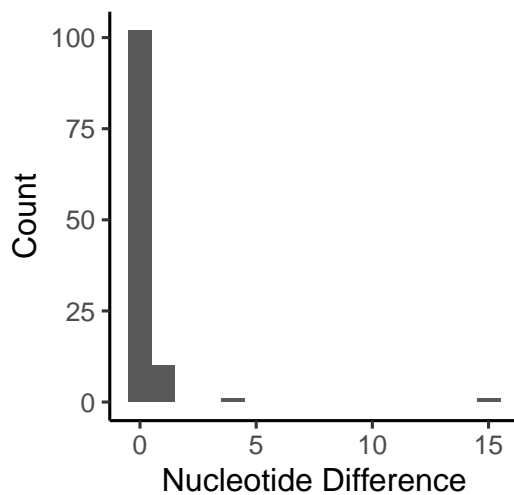
### IGHV3-73\*01

65 sequences assigned  
55 (84.6%) exact matches, in which:  
50 unique CDR3  
4 unique J



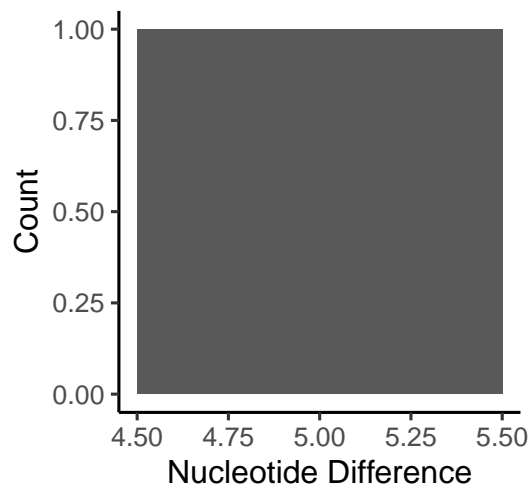
### IGHV3-53\*04

114 sequences assigned  
102 (89.5%) exact matches, in which:  
99 unique CDR3  
6 unique J



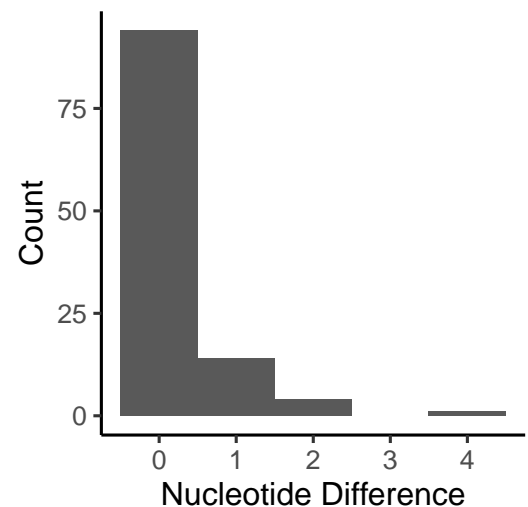
### IGHV3-71\*03

1 sequences assigned  
No exact matches.



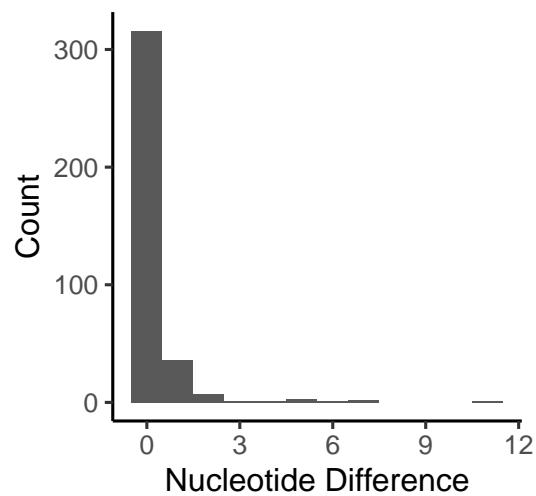
### IGHV3-73\*02

113 sequences assigned  
94 (83.2%) exact matches, in which:  
89 unique CDR3  
6 unique J



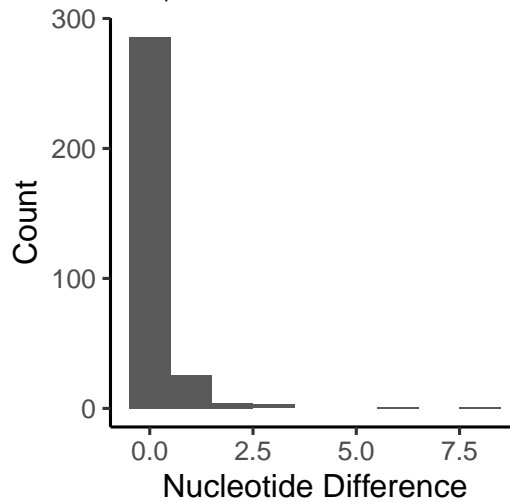
### IGHV3-74\*01

368 sequences assigned  
316 (85.9%) exact matches, in which:  
296 unique CDR3  
6 unique J



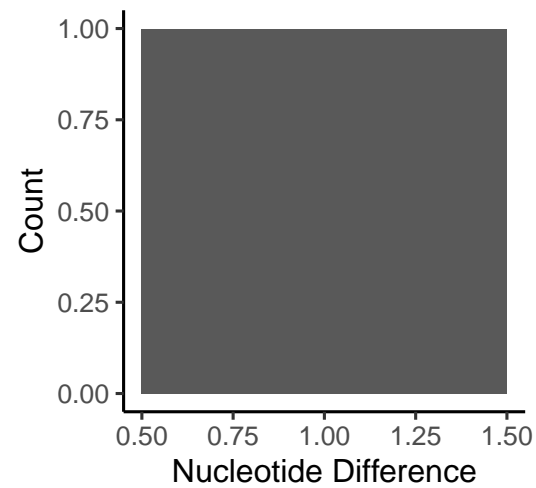
### IGHV4-4\*02

321 sequences assigned  
286 (89.1%) exact matches, in which:  
277 unique CDR3  
6 unique J



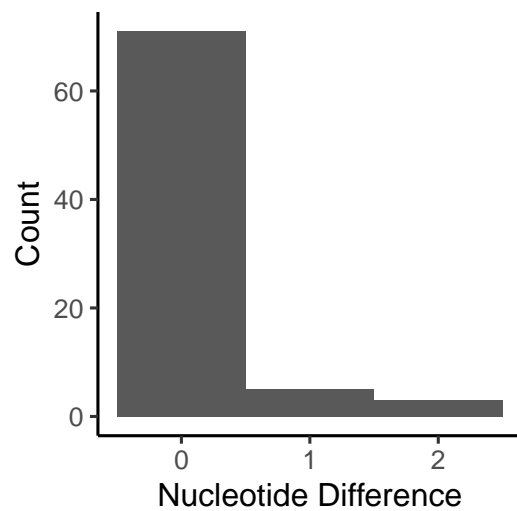
### IGHV4-28\*04

1 sequences assigned  
No exact matches.



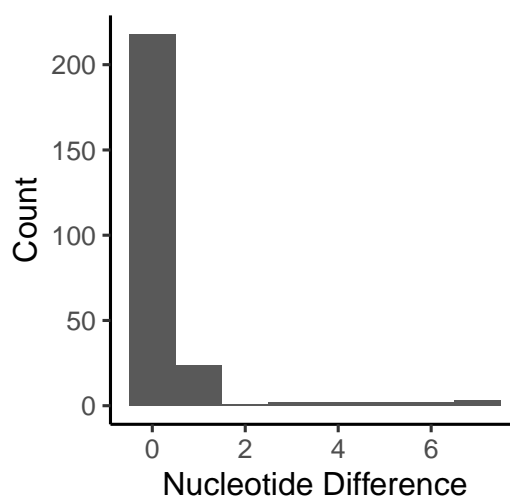
### IGHV3-43D\*03

79 sequences assigned  
71 (89.9%) exact matches, in which:  
69 unique CDR3  
5 unique J



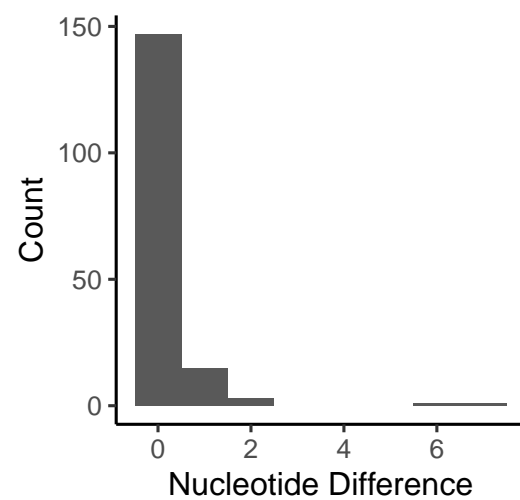
### IGHV4-4\*07

254 sequences assigned  
218 (85.8%) exact matches, in which:  
213 unique CDR3  
6 unique J



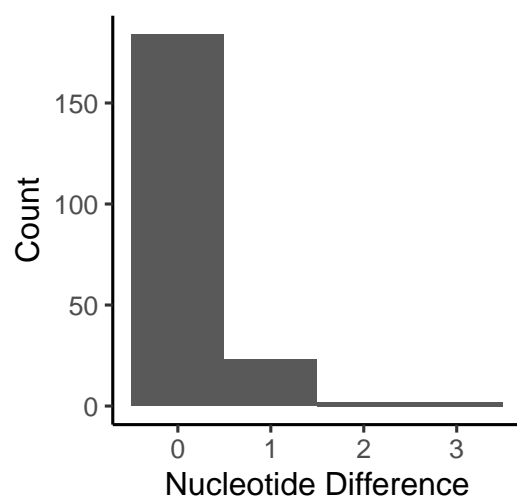
### IGHV4-30-4\*01

167 sequences assigned  
147 (88%) exact matches, in which:  
143 unique CDR3  
6 unique J



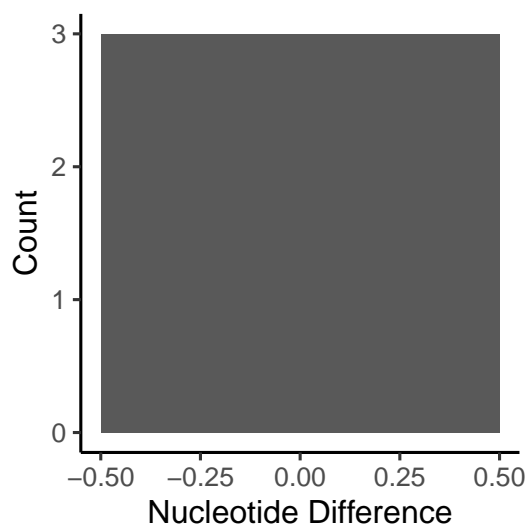
### IGHV3-64D\*06

211 sequences assigned  
184 (87.2%) exact matches, in which:  
172 unique CDR3  
6 unique J



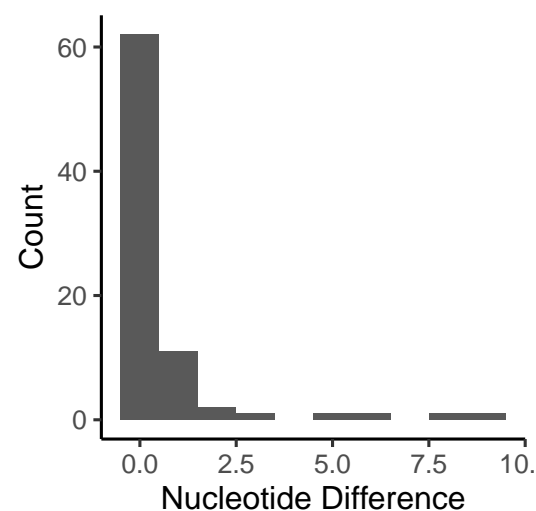
### IGHV4-28\*01

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



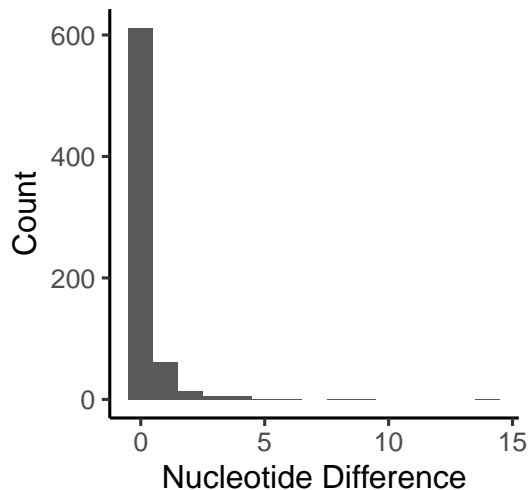
### IGHV4-30-2\*01

80 sequences assigned  
62 (77.5%) exact matches, in which:  
62 unique CDR3  
6 unique J



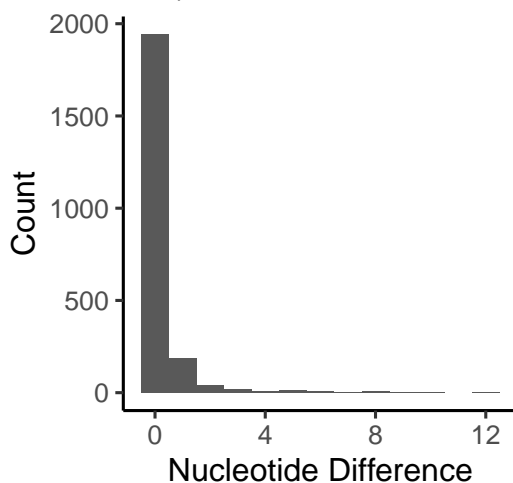
### IGHV4–31\*03

703 sequences assigned  
612 (87.1%) exact matches, in which:  
587 unique CDR3  
6 unique J



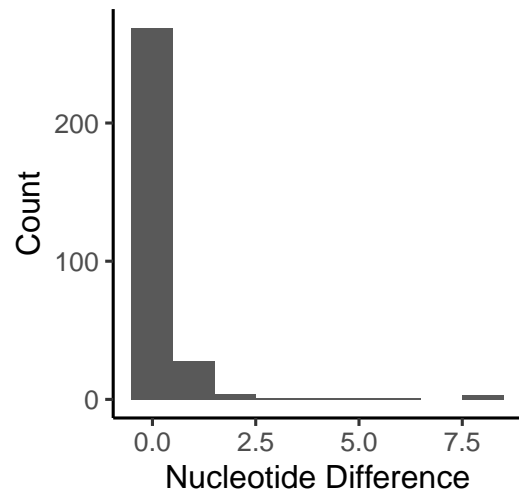
### IGHV4–39\*01

2239 sequences assigned  
1942 (86.7%) exact matches, in which:  
1849 unique CDR3  
6 unique J



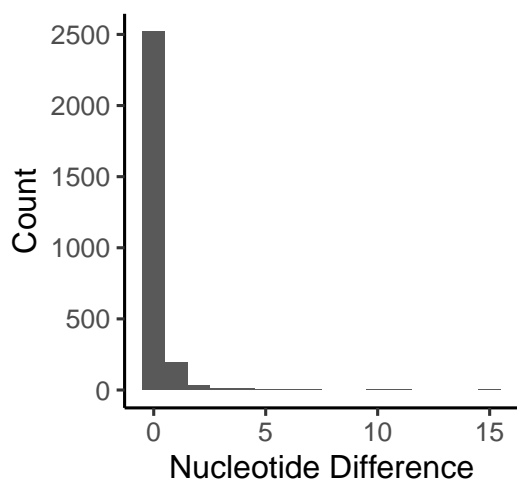
### IGHV4–59\*08

308 sequences assigned  
269 (87.3%) exact matches, in which:  
264 unique CDR3  
6 unique J



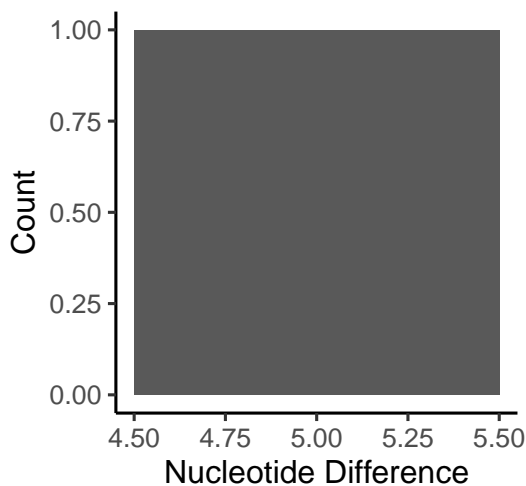
### IGHV4–34\*01

2795 sequences assigned  
2519 (90.1%) exact matches, in which:  
2381 unique CDR3  
6 unique J



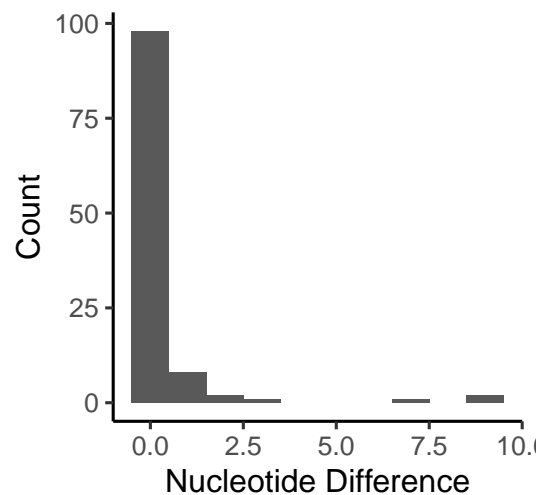
### IGHV4–55\*08

1 sequences assigned  
No exact matches.



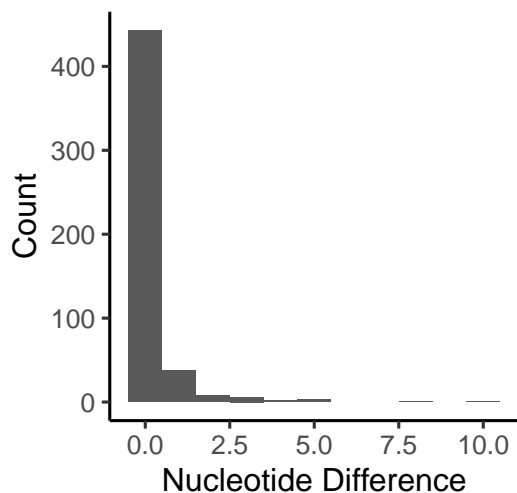
### IGHV4–61\*01

112 sequences assigned  
98 (87.5%) exact matches, in which:  
96 unique CDR3  
6 unique J



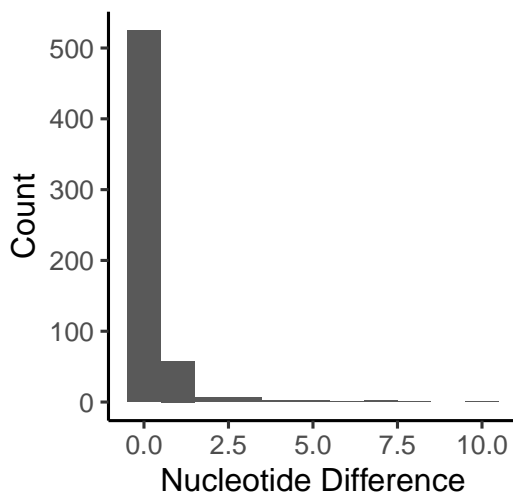
### IGHV4–38–2\*02

503 sequences assigned  
443 (88.1%) exact matches, in which:  
424 unique CDR3  
6 unique J



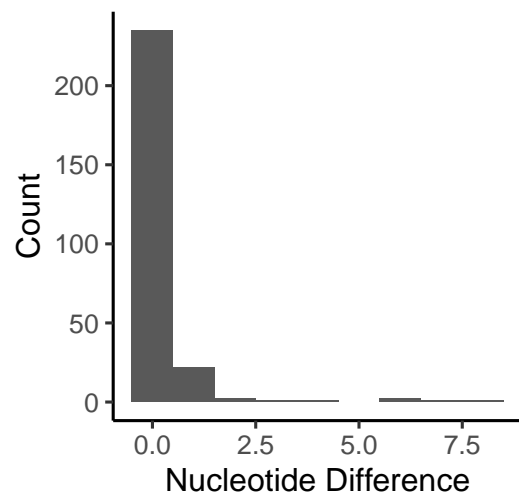
### IGHV4–59\*01

607 sequences assigned  
525 (86.5%) exact matches, in which:  
521 unique CDR3  
6 unique J



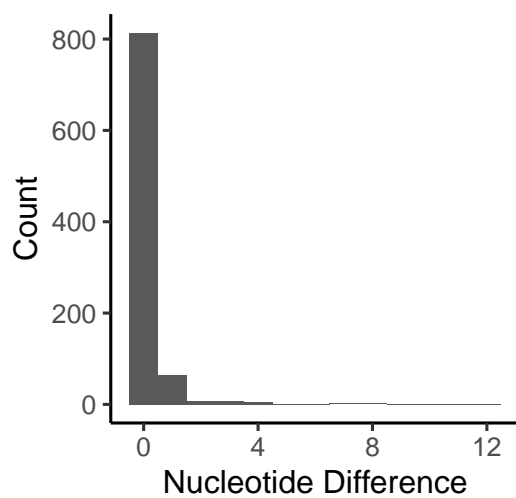
### IGHV5–10–1\*01

265 sequences assigned  
235 (88.7%) exact matches, in which:  
227 unique CDR3  
6 unique J



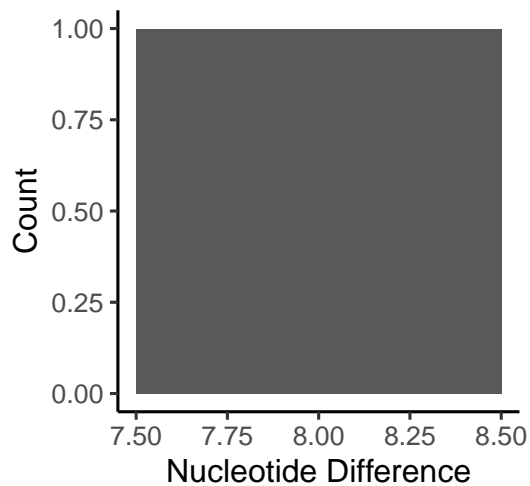
## IGHV5-51\*01

908 sequences assigned  
814 (89.6%) exact matches, in which:  
777 unique CDR3  
6 unique J



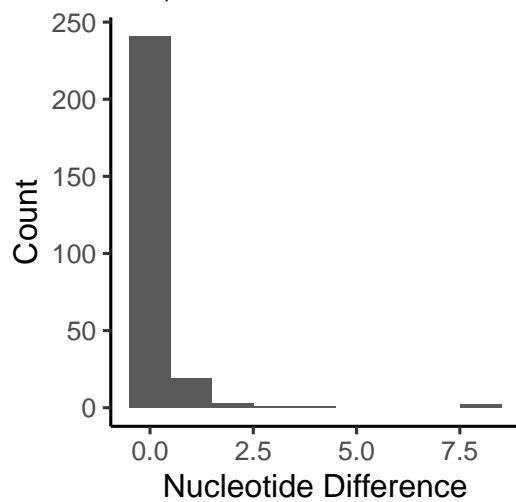
## IGHV7-81\*01

1 sequences assigned  
No exact matches.



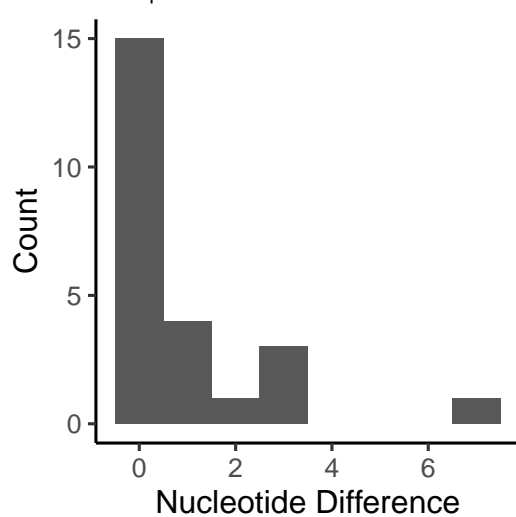
## IGHV6-1\*01

267 sequences assigned  
241 (90.3%) exact matches, in which:  
226 unique CDR3  
6 unique J



## IGHV7-4-1\*01

24 sequences assigned  
15 (62.5%) exact matches, in which:  
15 unique CDR3  
5 unique J







Warning – no inferred sequences found.