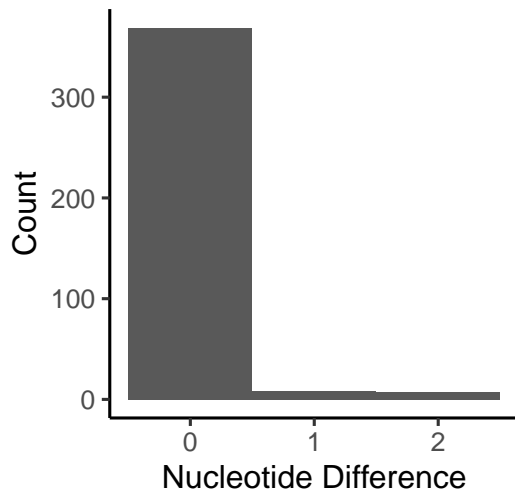


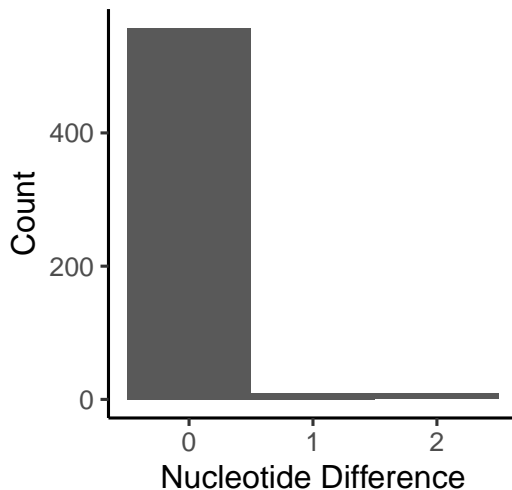
### IGHV1–2\*02

384 sequences assigned  
369 (96.1%) exact matches, in which:  
369 unique CDR3  
6 unique J



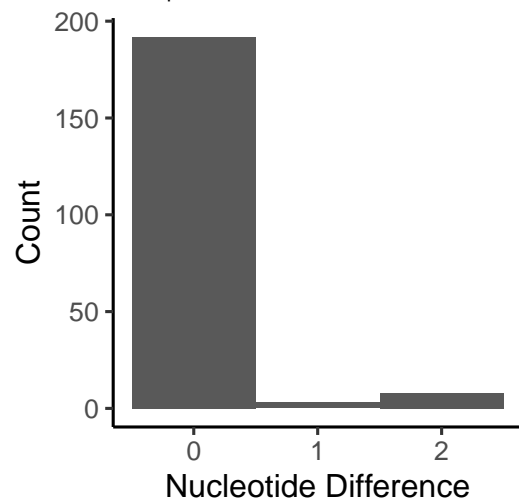
### IGHV1–8\*01

577 sequences assigned  
558 (96.7%) exact matches, in which:  
558 unique CDR3  
7 unique J



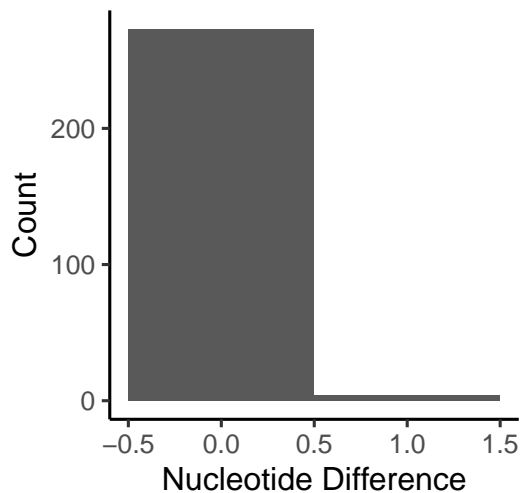
### IGHV1–46\*01

203 sequences assigned  
192 (94.6%) exact matches, in which:  
192 unique CDR3  
6 unique J



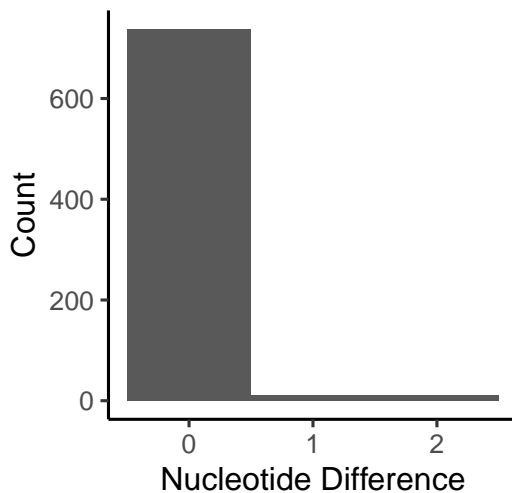
### IGHV1–2\*06

277 sequences assigned  
273 (98.6%) exact matches, in which:  
273 unique CDR3  
7 unique J



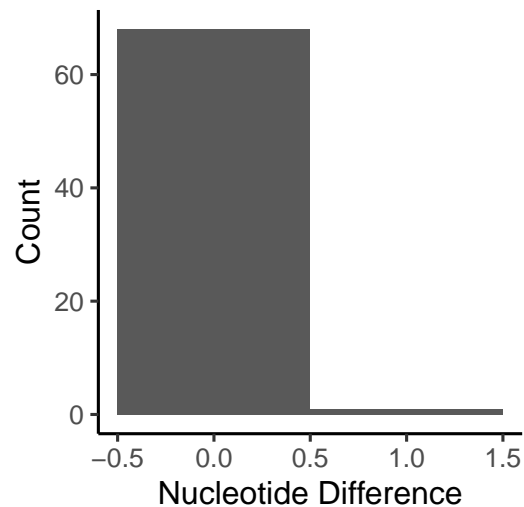
### IGHV1–18\*01

759 sequences assigned  
738 (97.2%) exact matches, in which:  
738 unique CDR3  
7 unique J



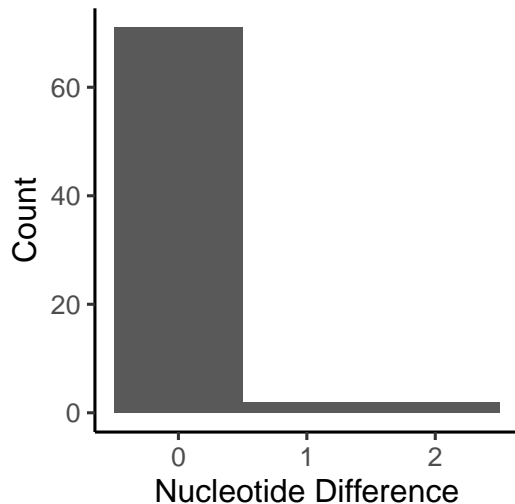
### IGHV1–46\*03

69 sequences assigned  
68 (98.6%) exact matches, in which:  
68 unique CDR3  
6 unique J



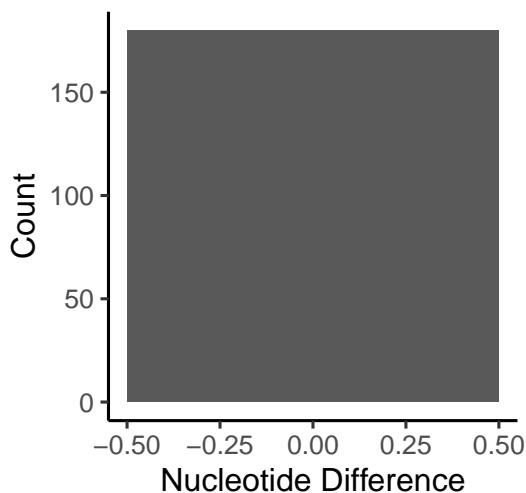
### IGHV1–3\*01\_05

75 sequences assigned  
71 (94.7%) exact matches, in which:  
71 unique CDR3  
5 unique J



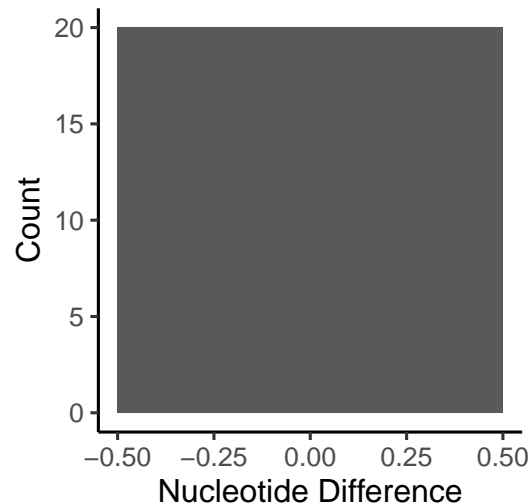
### IGHV1–24\*01

180 sequences assigned  
180 (100%) exact matches, in which:  
179 unique CDR3  
7 unique J



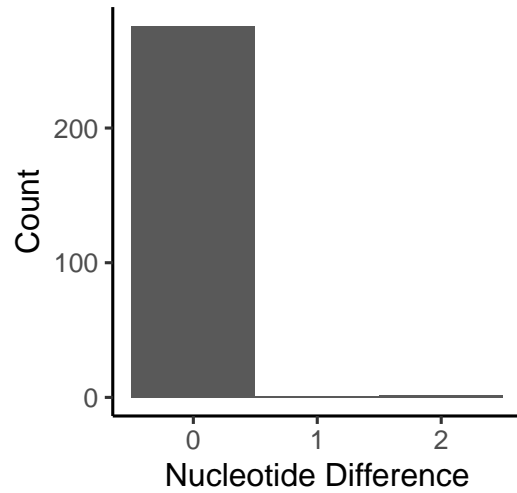
### IGHV1–58\*02

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



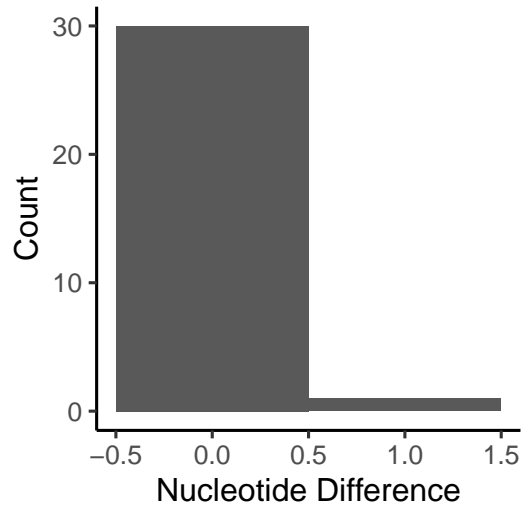
### IGHV1–69\*05

279 sequences assigned  
276 (98.9%) exact matches, in which:  
276 unique CDR3  
6 unique J



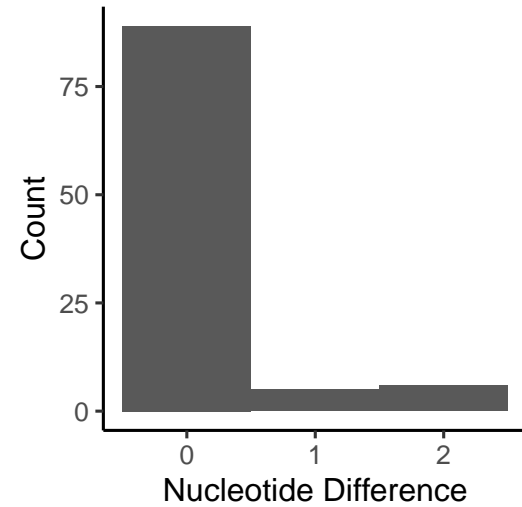
### IGHV2–26\*01

31 sequences assigned  
30 (96.8%) exact matches, in which:  
30 unique CDR3  
5 unique J



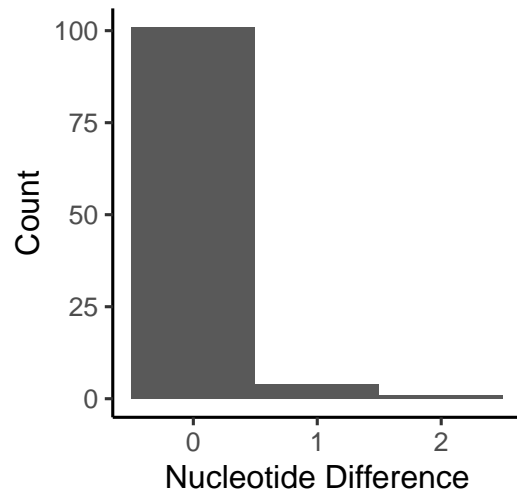
### IGHV3–7\*01

100 sequences assigned  
89 (89%) exact matches, in which:  
89 unique CDR3  
5 unique J



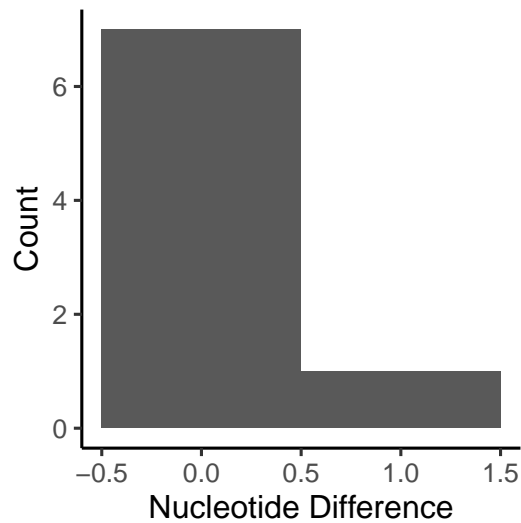
### IGHV1–69\*04\_09

106 sequences assigned  
101 (95.3%) exact matches, in which:  
101 unique CDR3  
6 unique J



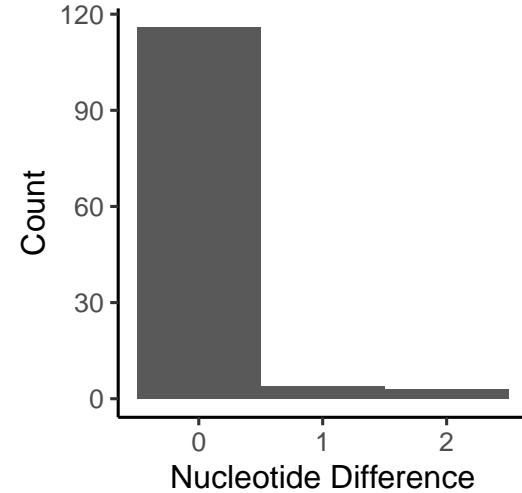
### IGHV2–26\*02

8 sequences assigned  
7 (87.5%) exact matches, in which:  
7 unique CDR3  
2 unique J



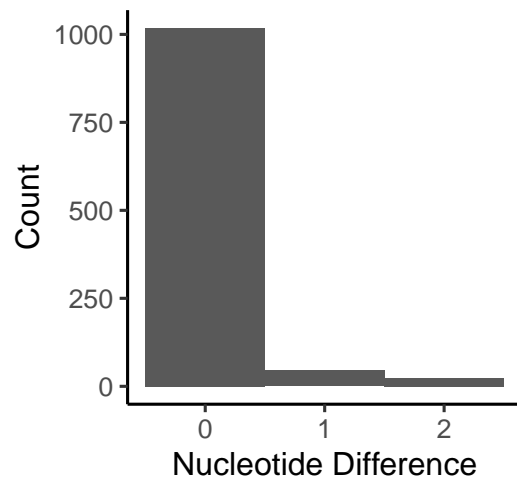
### IGHV3–7\*03

123 sequences assigned  
116 (94.3%) exact matches, in which:  
116 unique CDR3  
6 unique J



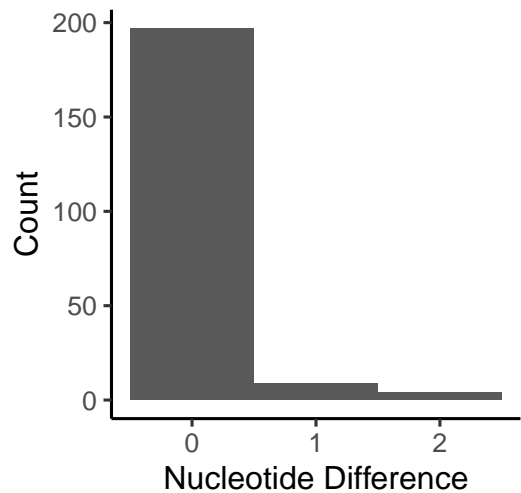
### IGHV2–5\*02

1087 sequences assigned  
1018 (93.7%) exact matches, in which:  
1016 unique CDR3  
7 unique J



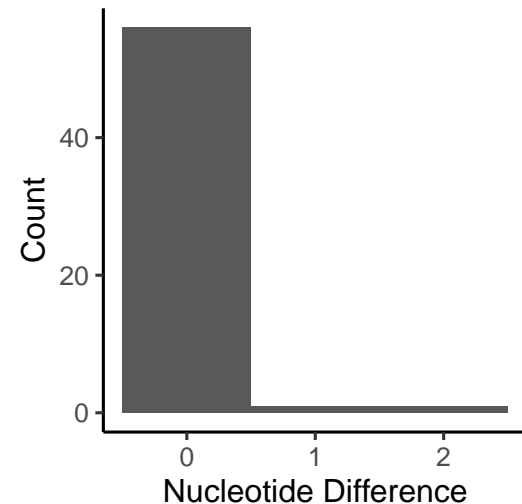
### IGHV2–70\*11\_15

210 sequences assigned  
197 (93.8%) exact matches, in which:  
196 unique CDR3  
7 unique J



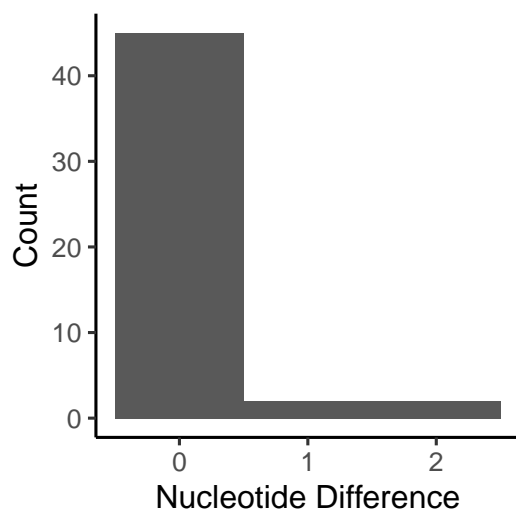
### IGHV3–9\*01

58 sequences assigned  
56 (96.6%) exact matches, in which:  
56 unique CDR3  
6 unique J



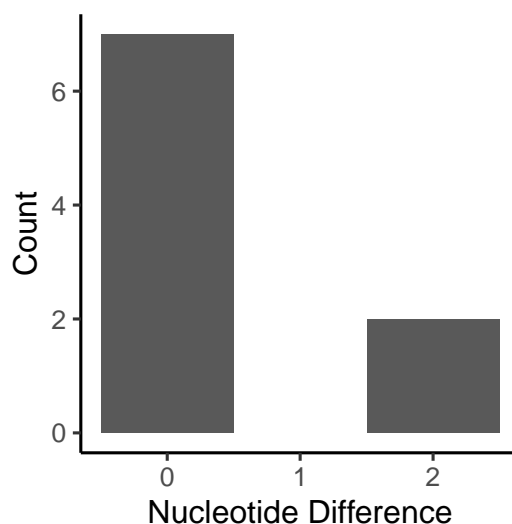
### IGHV3-11\*01

49 sequences assigned  
45 (91.8%) exact matches, in which:  
44 unique CDR3  
5 unique J



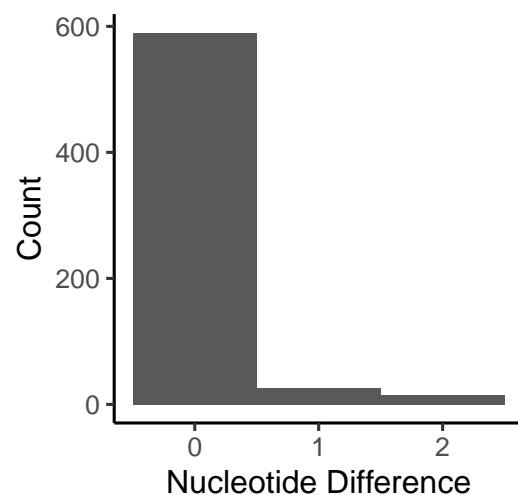
### IGHV3-20\*01\_02

9 sequences assigned  
7 (77.8%) exact matches, in which:  
7 unique CDR3  
4 unique J



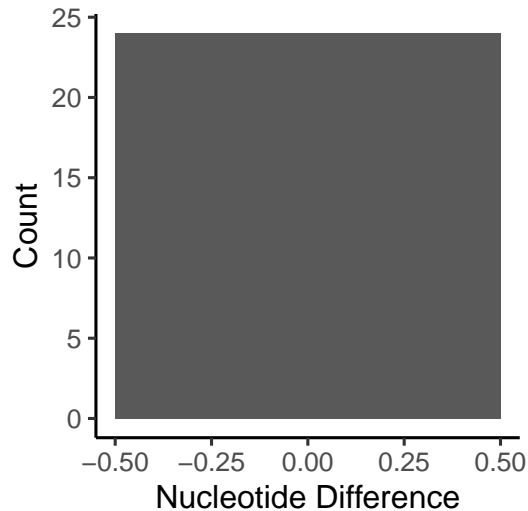
### IGHV3-23\*01\_04

631 sequences assigned  
590 (93.5%) exact matches, in which:  
585 unique CDR3  
7 unique J



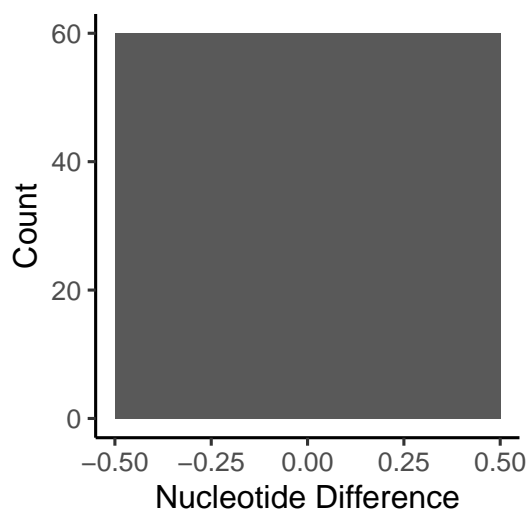
### IGHV3-13\*01

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



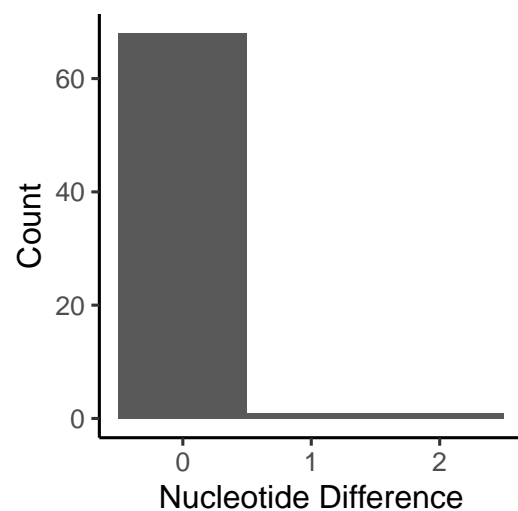
### IGHV3-20\*03\_04

60 sequences assigned  
60 (100%) exact matches, in which:  
60 unique CDR3  
5 unique J



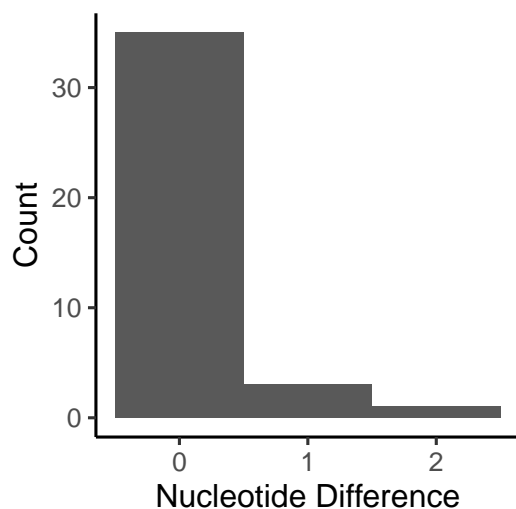
### IGHV3-33\*01

70 sequences assigned  
68 (97.1%) exact matches, in which:  
68 unique CDR3  
6 unique J



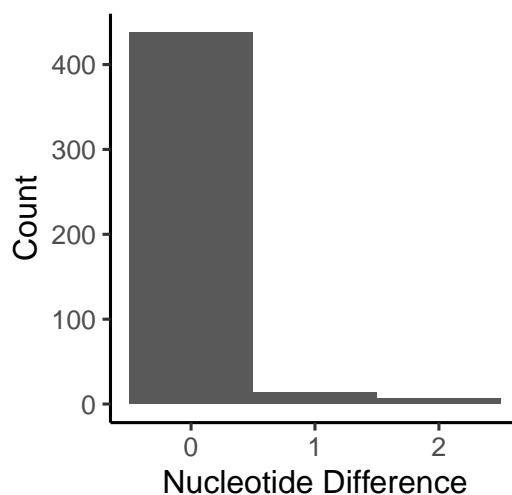
### IGHV3-15\*01\_02

39 sequences assigned  
35 (89.7%) exact matches, in which:  
35 unique CDR3  
6 unique J



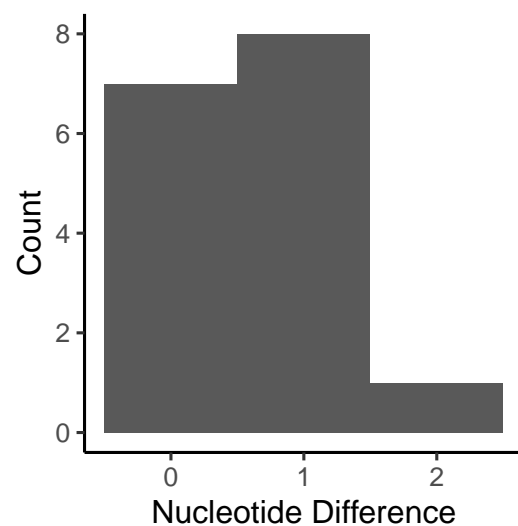
### IGHV3-21\*01\_02

459 sequences assigned  
438 (95.4%) exact matches, in which:  
430 unique CDR3  
7 unique J



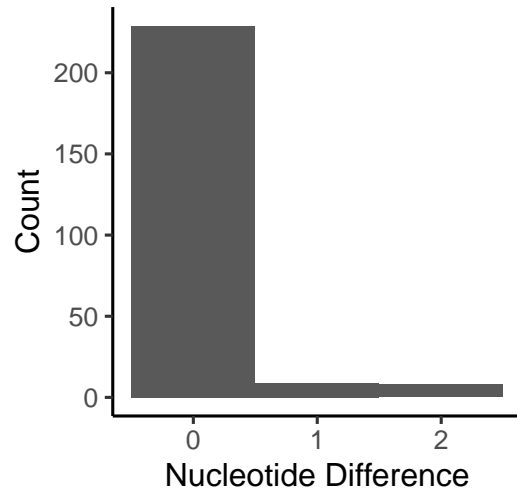
### IGHV3-43\*01

16 sequences assigned  
7 (43.8%) exact matches, in which:  
7 unique CDR3  
3 unique J



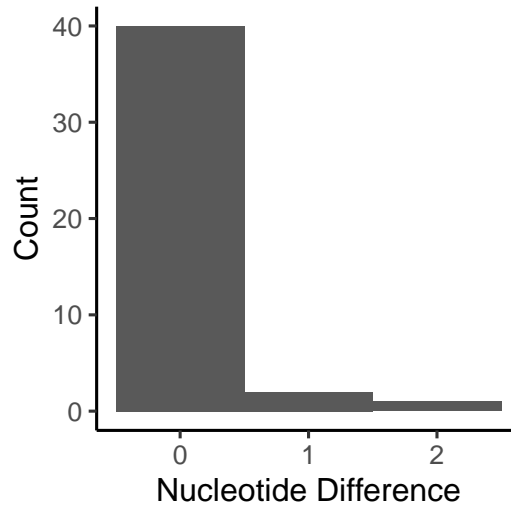
### IGHV3-48\*01

246 sequences assigned  
229 (93.1%) exact matches, in which:  
228 unique CDR3  
7 unique J



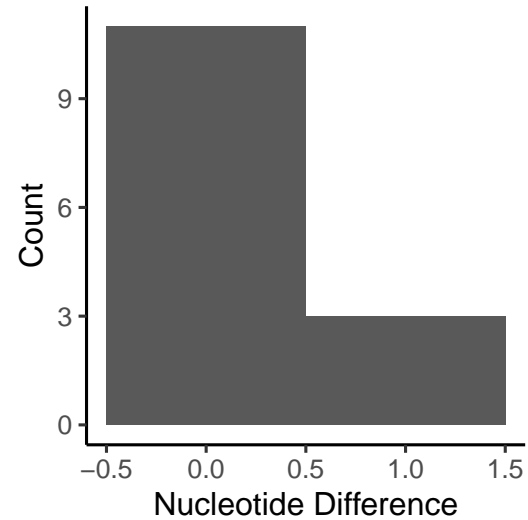
### IGHV3-64\*01

43 sequences assigned  
40 (93%) exact matches, in which:  
38 unique CDR3  
7 unique J



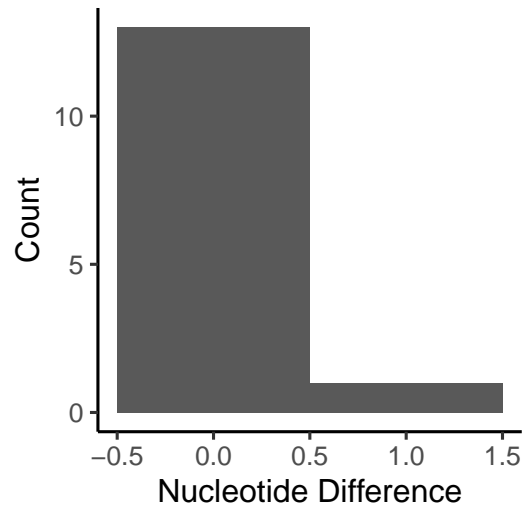
### IGHV3-73\*01\_02

14 sequences assigned  
11 (78.6%) exact matches, in which:  
11 unique CDR3  
4 unique J



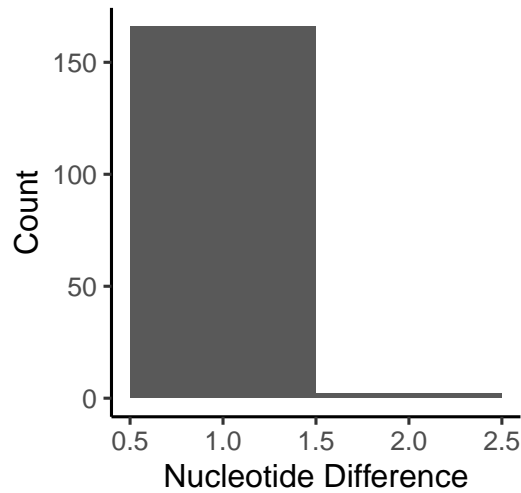
### IGHV3-49\*03\_05

14 sequences assigned  
13 (92.9%) exact matches, in which:  
13 unique CDR3  
5 unique J



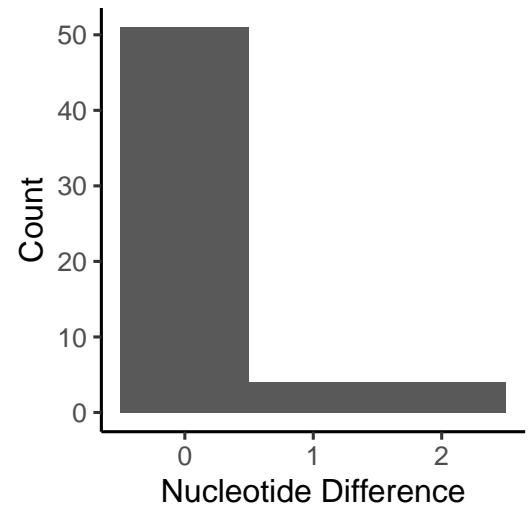
### IGHV3-66\*01

168 sequences assigned  
No exact matches.



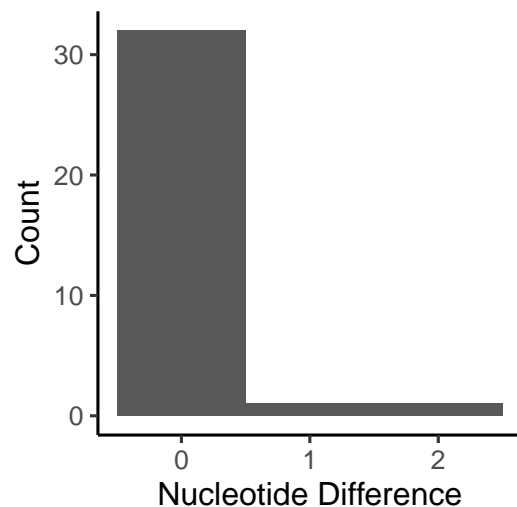
### IGHV3-74\*01\_02

59 sequences assigned  
51 (86.4%) exact matches, in which:  
51 unique CDR3  
6 unique J



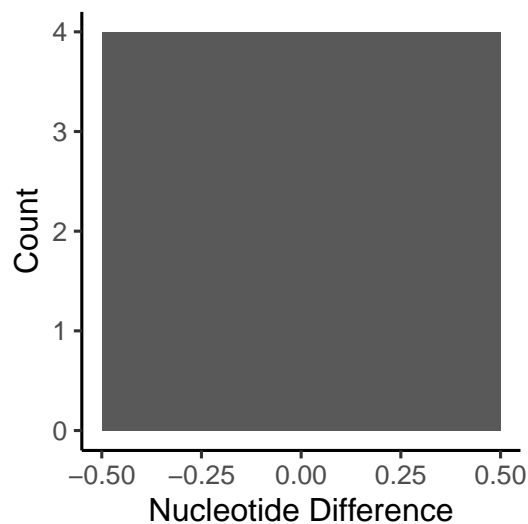
### IGHV3-53\*04

34 sequences assigned  
32 (94.1%) exact matches, in which:  
30 unique CDR3  
5 unique J



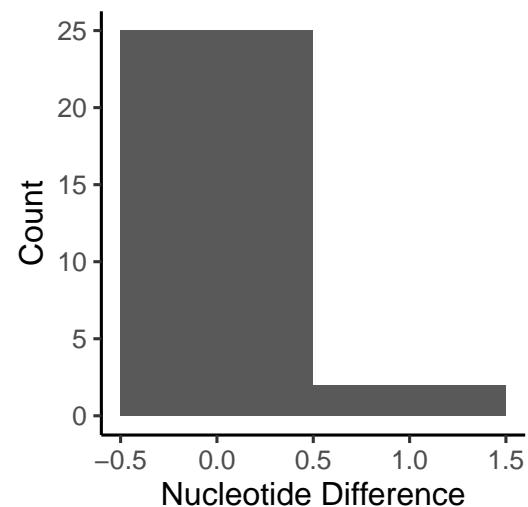
### IGHV3-72\*01

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



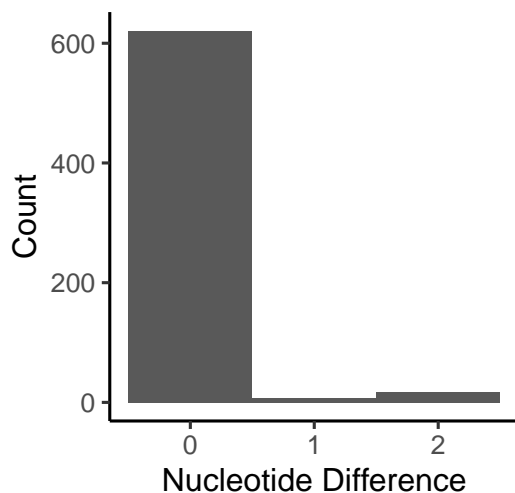
### IGHV3-43D\*04

27 sequences assigned  
25 (92.6%) exact matches, in which:  
25 unique CDR3  
5 unique J



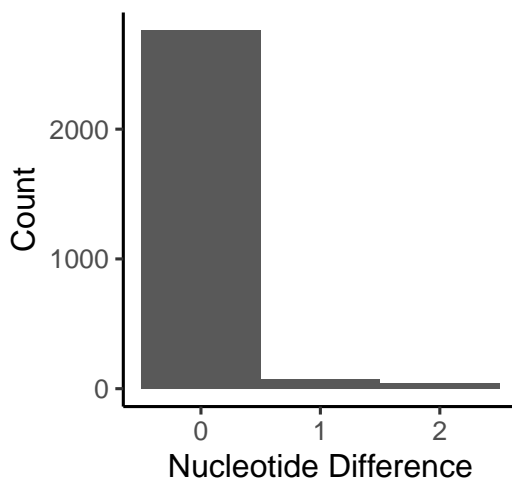
### IGHV4-4\*07

646 sequences assigned  
621 (96.1%) exact matches, in which:  
619 unique CDR3  
7 unique J



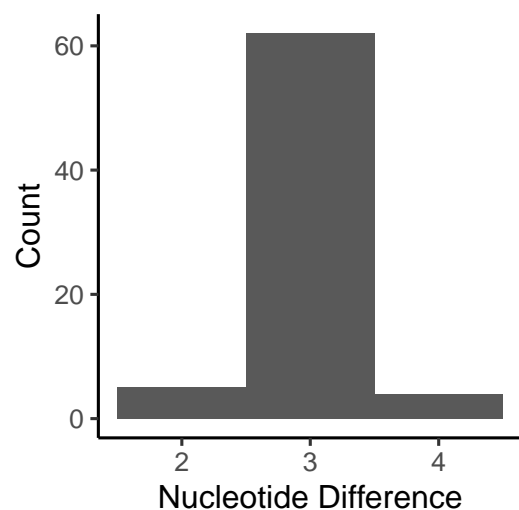
### IGHV4-34\*01\_02

2870 sequences assigned  
2761 (96.2%) exact matches, in which:  
2740 unique CDR3  
7 unique J



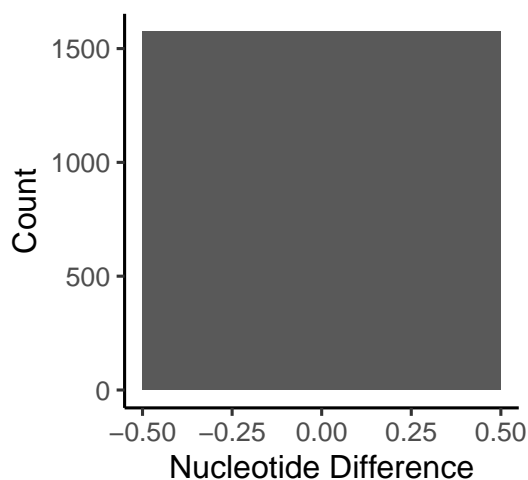
### IGHV4/OR15-8\*01

71 sequences assigned  
No exact matches.



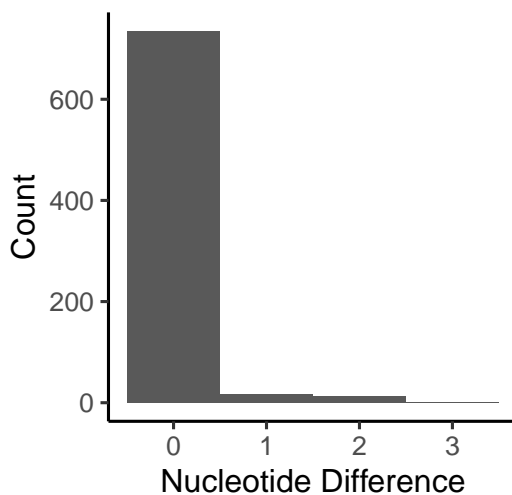
### IGHV4-4\*09

1574 sequences assigned  
1574 (100%) exact matches, in which:  
1554 unique CDR3  
7 unique J



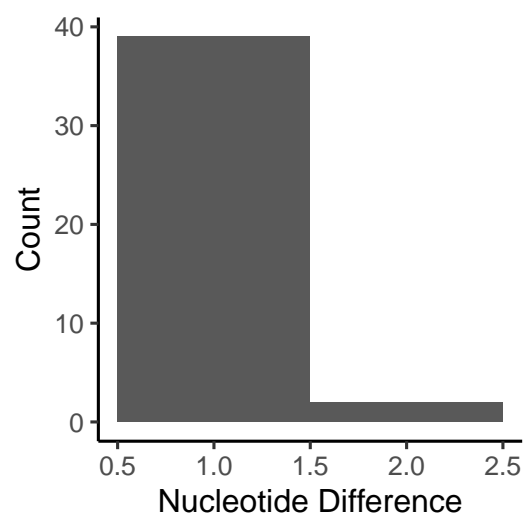
### IGHV4-39\*07

765 sequences assigned  
735 (96.1%) exact matches, in which:  
731 unique CDR3  
6 unique J



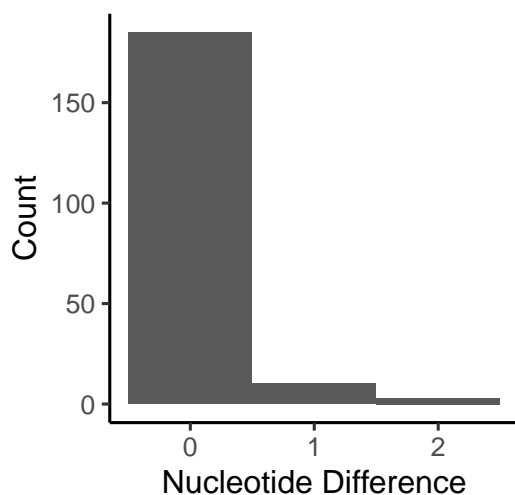
### IGHV5-51\*07

41 sequences assigned  
No exact matches.



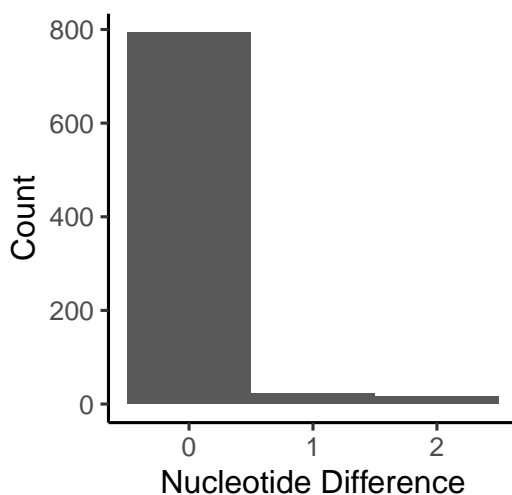
### IGHV4-31\*02

198 sequences assigned  
185 (93.4%) exact matches, in which:  
184 unique CDR3  
6 unique J



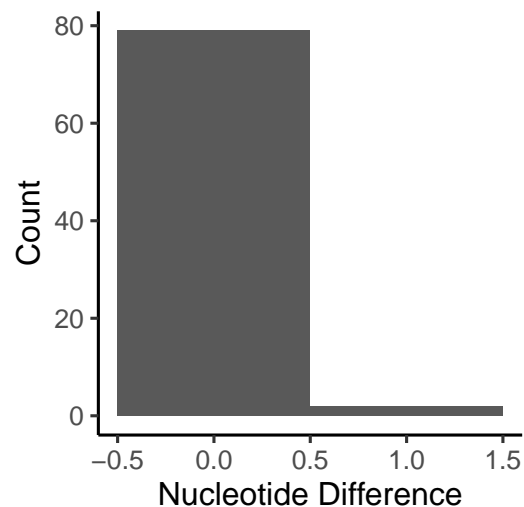
### IGHV4-59\*08

833 sequences assigned  
794 (95.3%) exact matches, in which:  
789 unique CDR3  
7 unique J



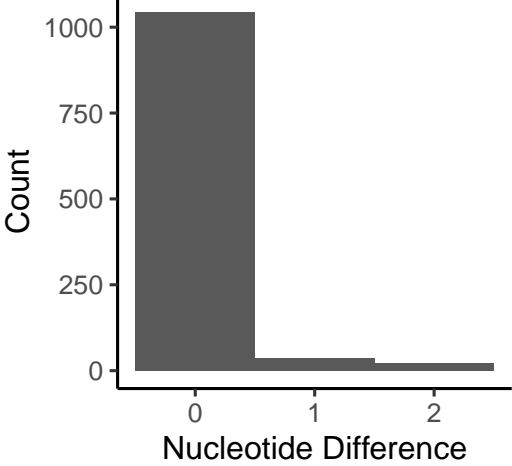
### IGHV5-51\*01\_03

81 sequences assigned  
79 (97.5%) exact matches, in which:  
79 unique CDR3  
7 unique J



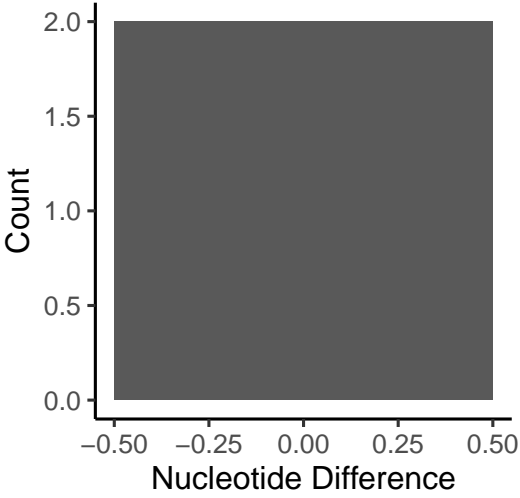
IGHV6-1\*01\_02

1099 sequences assigned  
1043 (94.9%) exact matches, in which:  
1036 unique CDR3  
7 unique J

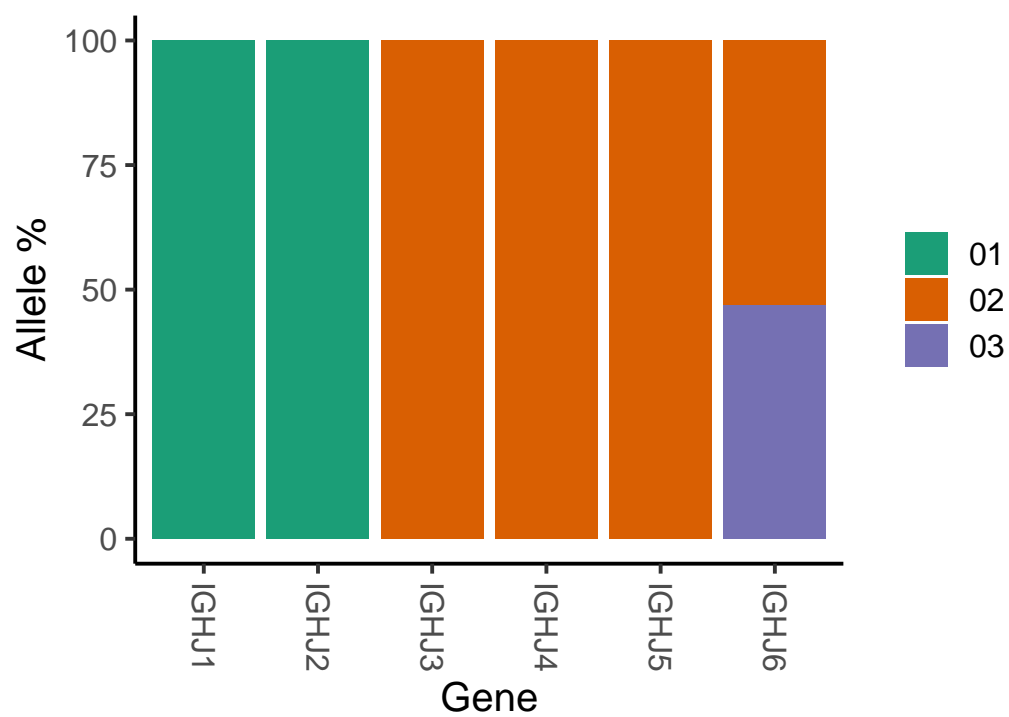


IGHV7-4-1\*01

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



Allele Usage



Sequence Count by IGHJ6 allele usage

