

	A	C	D	E	F	G	H	I	K	L	M	N	P	Q	R	S	T	V	W	Y	
1:Q	1.02%	0.07%	0.93%	6.50%	0.07%	1.04%	5.52%	0.22%	6.65%	8.00%	0.82%	0.84%	7.45%	8.42%	0.71%	1.02%	1.02%	0.48%	0.42%		
2:V	6.79%	0.07%	0.49%	5.18%	0.78%	4.89%	0.04%	4.65%	1.16%	10.94%	6.98%	0.14%	0.67%	0.30%	1.22%	0.76%	1.99%	52.82%	0.12%	0.01%	
3:Q	0.30%	0.22%	0.76%	2.37%	0.16%	0.46%	13.27%	0.35%	7.66%	5.04%	0.27%	2.16%	4.21%	51.55%	8.13%	0.75%	0.91%	0.36%	0.69%	0.38%	
4:L	1.87%	0.08%	0.10%	1.06%	1.44%	0.98%	0.10%	1.79%	0.94%	56.95%	6.82%	0.08%	3.31%	1.12%	2.74%	2.61%	1.38%	15.94%	0.68%	0.02%	
5:V	6.52%	0.06%	0.52%	5.00%	0.65%	4.96%	0.05%	4.12%	1.16%	11.50%	6.84%	0.13%	0.90%	0.43%	1.22%	0.67%	2.14%	53.01%	0.11%	0.01%	
6:Q	0.61%	0.12%	0.37%	1.64%	0.14%	0.62%	8.27%	0.15%	5.22%	12.27%	0.61%	1.13%	8.09%	46.43%	9.22%	1.22%	0.99%	0.91%	1.76%	0.24%	
7:S	2.92%	3.51%	0.08%	0.01%	3.44%	0.18%	0.13%	0.18%	0.01%	0.83%	0.01%	0.09%	6.85%	0.02%	0.27%	77.03%	3.07%	0.22%	0.19%	0.96%	
8:G	1.15%	0.03%	0.24%	4.82%	0.00%	85.98%	0.01%	0.01%	0.22%	0.17%	0.08%	0.01%	0.08%	0.19%	4.23%	0.11%	0.15%	1.22%	1.29%	0.00%	
9:A	48.96%	0.15%	0.67%	0.10%	0.18%	1.75%	0.17%	0.97%	0.03%	0.57%	0.03%	0.31%	13.11%	0.02%	0.31%	5.94%	24.85%	1.81%	0.01%	0.06%	
10:E	4.51%	0.04%	0.94%	58.39%	0.04%	9.41%	0.75%	0.13%	4.19%	0.61%	0.30%	0.72%	0.67%	5.20%	1.10%	0.35%	0.91%	2.44%	0.09%	0.20%	
11:V	7.84%	0.02%	0.58%	6.47%	0.27%	6.31%	0.02%	2.25%	0.77%	11.28%	9.24%	0.07%	0.47%	0.21%	0.93%	0.66%	1.47%	50.88%	0.26%	0.01%	
12:K	0.94%	0.03%	0.70%	6.66%	0.03%	1.56%	0.33%	1.42%	45.63%	0.84%	6.97%	2.88%	0.46%	4.92%	16.24%	0.90%	8.18%	0.86%	0.41%	0.05%	
13:K	0.84%	0.02%	0.49%	7.26%	0.02%	2.10%	0.16%	0.78%	49.70%	0.78%	6.31%	1.61%	0.39%	3.88%	16.73%	0.71%	6.89%	0.84%	0.47%	0.02%	
14:P	5.80%	0.61%	0.10%	0.04%	0.61%	0.20%	0.63%	0.32%	0.07%	1.99%	0.04%	0.23%	63.32%	0.13%	1.47%	15.72%	8.07%	0.43%	0.09%	0.14%	
15:G	0.75%	0.02%	0.15%	3.40%	0.00%	88.45%	0.01%	0.01%	0.17%	0.12%	0.06%	0.01%	0.05%	0.14%	4.32%	0.10%	0.11%	0.85%	1.27%	0.00%	
16:A	86.49%	0.02%	1.72%	0.10%	0.03%	1.41%	0.04%	0.14%	0.03%	0.06%	0.02%	0.12%	2.25%	0.01%	0.03%	1.41%	3.93%	2.18%	0.00%	0.01%	
17:S	2.12%	0.36%	0.04%	0.18%	0.46%	0.09%	0.02%	0.11%	0.03%	3.28%	0.01%	0.02%	9.07%	0.09%	0.22%	81.66%	1.80%	0.12%	0.20%	0.14%	
18:V	4.13%	0.01%	0.42%	4.47%	0.23%	4.31%	0.03%	1.72%	0.40%	14.11%	6.84%	0.03%	0.63%	0.33%	0.67%	0.35%	0.81%	60.39%	0.11%	0.01%	
19:K	0.57%	0.04%	0.97%	7.84%	0.03%	0.92%	0.58%	0.80%	60.75%	0.33%	1.26%	6.61%	0.31%	5.60%	6.57%	1.52%	4.82%	0.25%	0.14%	0.10%	
20:V	12.16%	0.06%	4.93%	0.39%	0.55%	5.55%	0.06%	1.82%	0.07%	1.68%	0.29%	0.19%	0.23%	0.01%	0.11%	0.29%	0.59%	70.98%	0.01%	0.03%	
21:S	4.33%	2.58%	0.22%	0.01%	2.77%	0.22%	0.44%	0.15%	0.03%	1.60%	0.02%	0.19%	11.63%	0.03%	0.37%	71.13%	1.93%	0.42%	0.21%	1.73%	
22:C	0.51%	51.28%	1.32%	0.09%	4.07%	3.69%	2.43%	0.14%	0.14%	1.99%	0.01%	1.03%	1.06%	0.14%	3.42%	11.01%	0.31%	0.24%	5.55%	11.57%	
23:K	2.43%	0.03%	0.31%	8.04%	0.02%	1.83%	0.16%	0.36%	37.12%	1.11%	5.07%	1.12%	2.05%	4.85%	15.81%	1.51%	16.66%	0.98%	0.50%	0.04%	
24:A	41.19%	0.22%	1.43%	0.15%	0.24%	1.83%	0.21%	1.12%	0.07%	0.48%	0.05%	0.64%	12.61%	0.02%	0.25%	8.47%	29.18%	1.73%	0.01%	0.10%	
25:S	2.98%	13.51%	0.38%	0.04%	11.14%	0.47%	0.57%	0.37%	0.03%	3.10%	0.02%	0.30%	5.38%	0.06%	0.60%	55.38%	1.34%	0.74%	0.74%	2.88%	
26:G	6.11%	0.09%	4.02%	12.31%	0.07%	61.62%	0.21%	0.47%	0.91%	0.65%	0.07%	0.29%	0.81%	0.53%	7.21%	0.74%	1.38%	2.38%	0.06%	0.07%	
27:Y	0.77%	9.39%	10.77%	1.12%	7.76%	1.98%	14.01%	1.13%	1.39%	3.26%	0.08%	9.11%	1.42%	1.06%	2.65%	9.86%	1.05%	0.83%	0.39%	21.95%	
28:T	12.08%	0.42%	0.55%	0.07%	0.70%	0.69%	0.25%	5.85%	0.50%	0.84%	0.78%	1.95%	8.91%	0.02%	1.08%	11.39%	51.91%	1.70%	0.04%	0.25%	
29:F	0.29%	4.67%	0.14%	0.02%	55.43%	0.22%	0.35%	1.07%	0.01%	25.48%	0.11%	0.11%	1.34%	0.05%	0.49%	5.67%	0.14%	2.83%	0.28%	1.30%	
30:T	9.34%	0.32%	0.64%	0.04%	0.50%	0.81%	0.24%	5.02%	0.29%	0.78%	0.17%	1.87%	7.16%	0.02%	0.87%	9.72%	60.26%	1.76%	0.01%	0.16%	
31:G	13.20%	0.51%	22.92%	1.88%	0.12%	48.87%	0.78%	0.25%	0.14%	0.37%	0.04%	0.66%	0.37%	0.10%	1.34%	1.29%	0.71%	6.19%	0.03%	0.21%	
32:Y	0.46%	12.97%	3.75%	0.25%	9.30%	0.76%	11.43%	0.44%	0.77%	4.20%	0.04%	4.58%	1.57%	0.73%	1.79%	12.18%	0.78%	0.32%	0.84%	32.85%	
33:Y	0.64%	13.14%	3.22%	0.49%	14.40%	0.69%	8.24%	0.59%	0.38%	4.40%	0.04%	3.35%	2.07%	0.80%	1.54%	18.48%	0.96%	0.47%	0.82%	25.29%	
34:M	2.20%	0.23%	0.17%	1.02%	4.56%	1.21%	0.12%	14.60%	1.82%	28.66%	12.79%	0.33%	2.90%	0.58%	3.50%	2.88%	6.73%	14.99%	0.65%	0.06%	
35:H	1.11%	0.97%	3.66%	0.47%	1.17%	0.54%	38.79%	0.85%	2.45%	7.34%	0.16%	7.02%	9.81%	8.39%	8.53%	2.82%	1.81%	0.97%	0.18%	2.95%	
36:W	0.08%	5.82%	0.05%	0.14%	0.26%	6.21%	0.07%	0.01%	0.04%	1.33%	0.03%	0.03%	0.16%	0.08%	8.56%	1.89%	0.05%	0.07%	74.71%	0.41%	
37:R	6.07%	0.01%	0.43%	4.41%	0.29%	5.01%	0.05%	2.15%	1.09%	11.11%	6.30%	0.12%	1.22%	0.59%	1.04%	0.76%	1.80%	57.45%	0.09%	0.01%	
38:V	0.10%	0.95%	0.03%	0.16%	0.03%	2.10%	0.68%	0.05%	0.39%	0.81%	0.01%	0.08%	2.46%	1.47%	87.61%	0.60%	0.15%	0.05%	2.25%	0.03%	
39:Q	0.12%	0.01%	0.05%	1.71%	0.01%	0.22%	1.36%	0.01%	1.32%	2.38%	0.04%	0.08%	3.81%	80.74%	7.64%	0.15%	0.11%	0.08%	0.13%	0.02%	
40:A	85.45%	0.05%	0.85%	0.36%	0.04%	2.61%	0.02%	0.17%	0.04%	0.05%	0.01%	0.11%	1.51%	0.01%	0.06%	1.59%	4.44%	2.60%	0.00%	0.02%	
41:P	1.02%	0.12%	0.05%	0.01%	0.11%	0.11%	1.13%	0.11%	0.01%	3.15%	0.01%	0.05%	86.24%	0.39%	2.18%	3.24%	1.86%	0.15%	0.01%	0.04%	
42:G	1.34%	0.12%	0.59%	3.37%	0.01%	82.16%	0.04%	0.11%	0.24%	0.12%	0.01%	0.05%	0.17%	0.13%	10.00%	0.63%	0.28%	0.56%	0.05%	0.01%	
43:Q	0.20%	0.13%	0.74%	1.62%	0.13%	0.29%	25.85%	0.24%	1.16%	5.39%	0.02%	1.65%	5.72%	45.30%	9.68%	0.64%	0.38%	0.28%	0.02%	0.56%	
44:G	1.15%	0.31%	1.18%	3.24%	0.01%	86.44%	0.04%	0.06%	0.13%	0.12%	0.05%	0.06%	0.08%	0.09%	4.52%	0.81%	0.15%	1.02%	0.52%	0.02%	
45:L	0.30%	0.14%	0.08%	0.02%	2.83%	0.10%	1.47%	2.02%	0.01%	69.63%	0.07%	0.09%	16.50%	0.30%	2.07%	0.69%	0.46%	3.15%	0.01%	0.05%	
46:E	5.09%	0.05%	18.68%	48.78%	0.06%	9.51%	0.75%	0.16%	4.59%	0.69%	0.41%	0.75%	0.62%	4.30%	1.01%	0.40%	1.06%	2.79%	0.10%	0.20%	
47:W	0.36%	8.85%	0.19%	0.63%	0.60%	5.63%	0.19%	0.09%	0.57%	2.53%	0.21%	0.14%	0.38%	0.21%	11.51%	4.72%	0.36%	0.42%	61.52%	0.90%	
48:M	2.44%	0.01%	0.05%	1.46%	0.15%	1.13%	0.02%	4.26%	5.67%	15.02%	35.03%	0.14%	1.15%	0.65%	6.48%	0.74%	8.98%	16.43%	0.19%	0.00%	
49:G	9.87%	0.11%	5.45%	17.91%	0.07%	44.39%	0.21%	0.92%	2.08%	0.87%	0.17%	0.58%	1.10%	0.63%	8.50%	1.40%	2.56%	2.99%	0.10%	0.06%	
50:W	0.28%	6.83%	0.25%	0.58%	0.79%	8.00%	0.59%	0.10%	0.10%	0.34%	4.26%	0.18%	0.22%	0.87%	0.65%	16.23%	5.16%	0.26%	0.45%	52.71%	1.25%
51:I	1.03%	0.12%	0.28%	0.09%	2.19%	0.41%	0.10%	60.70%	0.69%	7.05%	3.45%	1.38%	0.55%	0.04%	2.16%	2.89%	6.21%	10.59%	0.03%	0.04%	
52:N	0.83%	0.85%	6.32%	1.56%	0.45%	1.43%	5.76%	3.55%	14.78%	0.82%	0.64%	38.09%	0.83%	1.14%	5.28%	7.44%	7.32%	0.64%	0.09%	2.17%	
53:P	3.87%	0.57%	0.18%	0.06%	0.71%	0.30%	1.48%	0.51%	0.03%	4.31%	0.03%	0.19%	71.73%	0.29%	2.90%	7.50%	4.43%	0.68%	0.03%	0.19%	
54:N	1.55%	0.92%	15.01%	2.34%	1.16%	2.28%	6.91%	4.69%	8.00%	1.48%	0.55%	31.57%	0.72%	1.53%	6.10%	6.21%	5.01%	1.40%	0.09%	2.50%	
55:S	0.93%	6.17%	1.19%	0.18%	0.67%	8.22%	1.23%	3.45%	1.10%	0.54%	0.18%	6.29%	0.88%	0.17%	13.35%	45.01%	8.87%	0.59%	0.33%	0.67%	
56:G	7.21%	3.16%	9.80%	1.51%	0.44%	57.78%	1.14%	0.69%	0.16%	0.60%	0.02%	1.29%	0.75%	0.15%	4.28%	6.43%	1.11%	2.69%	0.20%	0.60%	
57:G	8.17%	0.84%	14.28%	3.52%	0.20%	58.68%	0.53%	0.33%	0.17%	0.35%	0.02%	0.45%	0.32%	0.10%	4.40%	1.05%	0.53%	5.54%	0.08%	0.42%	
58:T	6.49%	0.04%	0.20%	1.56%	0.10%	1.05%	0.06%	4.84%	2.46%	1.32%	0.76%	0.51%	5.85%	0.23%	7.90%	6.33%	59.31%	0.97%	0.02%	0.02%	
59:N	0.89%	1.40%	12.40%	2.53%	1.14%	1.38%	10.47%	4.17%	8.87%	1.44%	0.76%	28.50%	1.12%	1.86%	3.67%	6.53%	5.92%	1.04%	0.13%	5.77%	
60:A	0.58%	13.44%	3.49%	0.57%	14.26%	0.73%	7.86%	0.59%	0.43%	3.58%	0.04%	3.54%	1.81%	0.83%	1.58%	17.61%	0.97%	0.46%	0.62%	27.01%	
61:A	32.60%	0.07%	1.41%	10.03%	0.20%	3.61%	0.16%	1.68%	1.09%	2.35%	0.24%	0.18%	12.44%	0.85%	1.86%	9.87%	18.96%	2.29%	0.05%	0.04%	
62:Q	0.44%	0.04%	0.74%	8.12%	0.03%	0.82%	4.14%	0.05%	2.99%	4.82%	0.29%	0.20%	4.08%	62.93%	8.73%	0.29%	0.25%	0.60%	0.30%	0.14%	
63:K	1.23%	0.06%	1.18%	6.11%	0.07%	1.40%	0.63%	2.68%	44.99%	0.77%	4.05%	10.74%	0.54%	2.65%	9.51%	2.31%	9.95%	0.77%	0.22%	0.15%	