

## Codon Usage Table Vmax™ Express Cells vs. *E. coli*

<b>Vmax™ Strains</b>				
AmAcid	Codon	Number	/1000	Fraction
Ala	GCA	37713	25.43	0.30
Ala	GCC	20395	13.75	0.16
Ala	GCG	35377	23.86	0.28
Ala	GCT	33453	22.56	0.26
Cys	TGT	10303	6.95	0.66
Cys	TGC	5252	3.54	0.34
Asp	GAC	31913	21.52	0.40
Asp	GAT	48876	32.96	0.60
Glu	GAG	33513	22.60	0.35
Glu	GAA	62536	42.18	0.65
Phe	TTT	36114	24.36	0.59
Phe	TTC	24925	16.81	0.41
Gly	GGT	47133	31.79	0.46
Gly	GGG	10156	6.85	0.10
Gly	GGA	12701	8.57	0.12
Gly	GGC	33413	22.53	0.32
His	CAT	16523	11.14	0.50
His	CAC	16407	11.07	0.50
Ile	ATC	38439	25.92	0.41
Ile	ATA	9715	6.55	0.10
Ile	ATT	44856	30.25	0.48
Lys	AAG	24218	16.33	0.32
Lys	AAA	52590	35.47	0.68
Leu	CTT	27467	18.52	0.18
Leu	CTG	33802	22.80	0.22
Leu	CTA	19785	13.34	0.13
Leu	CTC	13581	9.16	0.09
Leu	TTA	29631	19.98	0.20
Leu	TTG	27566	18.59	0.18
Met	ATG	40222	27.13	1.00
Asn	AAC	34331	23.15	0.56
Asn	AAT	27009	18.22	0.44

<b><i>E. coli</i></b>				
AmAcid	Codon	Number	/1000	Fraction
Ala	GCA	26775	20.22	0.21
Ala	GCC	33888	25.59	0.27
Ala	GCG	44875	33.89	0.36
Ala	GCT	20391	15.40	0.16
Cys	TGT	6811	5.14	0.44
Cys	TGC	8607	6.50	0.56
Asp	GAC	25288	19.10	0.37
Asp	GAT	42189	31.86	0.63
Glu	GAG	23401	17.67	0.31
Glu	GAA	52390	39.56	0.69
Phe	TTT	29208	22.06	0.57
Phe	TTC	21869	16.51	0.43
Gly	GGT	32772	24.75	0.34
Gly	GGG	14624	11.04	0.15
Gly	GGA	10511	7.94	0.11
Gly	GGC	39546	29.86	0.41
His	CAT	16955	12.80	0.56
His	CAC	13105	9.90	0.44
Ile	ATC	33307	25.15	0.42
Ile	ATA	5561	4.20	0.07
Ile	ATT	40127	30.30	0.51
Lys	AAG	13719	10.36	0.24
Lys	AAA	44612	33.69	0.76
Leu	CTT	14490	10.94	0.10
Leu	CTG	70740	53.42	0.50
Leu	CTA	5010	3.78	0.04
Leu	CTC	14807	11.18	0.11
Leu	TTA	18073	13.65	0.13
Leu	TTG	17712	13.38	0.13
Met	ATG	37100	28.02	1.00
Asn	AAC	28559	21.57	0.55
Asn	AAT	22967	17.34	0.45

<b>Vmax™ Strains</b>				
AmAcid	Codon	Number	/1000	Fraction
Pro	CCT	18322	12.36	0.31
Pro	CCG	13082	8.82	0.22
Pro	CCA	23161	15.62	0.39
Pro	CCC	4361	2.94	0.07
Gln	CAA	38280	25.82	0.59
Gln	CAG	26683	18.00	0.41
Arg	AGG	2065	1.39	0.03
Arg	AGA	6537	4.41	0.10
Arg	CGA	9667	6.52	0.15
Arg	CGC	17303	11.67	0.26
Arg	CGG	2218	1.50	0.03
Arg	CGT	27842	18.78	0.42
Ser	AGC	18811	12.69	0.19
Ser	AGT	17738	11.96	0.18
Ser	TCT	23039	15.54	0.23
Ser	TCG	12088	8.15	0.12
Ser	TCC	7668	5.17	0.08
Ser	TCA	18787	12.67	0.19
Thr	ACA	18006	12.14	0.23
Thr	ACG	18548	12.51	0.23
Thr	ACT	21071	14.21	0.26
Thr	ACC	21993	14.83	0.28
Val	GTA	23744	16.01	0.22
Val	GTC	20156	13.59	0.19
Val	GTG	27543	18.58	0.26
Val	GTT	36179	24.40	0.34
Trp	TGG	18778	12.66	1.00
Tyr	TAT	19651	13.25	0.44
Tyr	TAC	25033	16.88	0.56
End	TAA	2960	2.00	0.66
End	TAG	883	0.60	0.20
End	TGA	662	0.45	0.15

<b><i>E. coli</i></b>				
AmAcid	Codon	Number	/1000	Fraction
Pro	CCT	9136	6.90	0.16
Pro	CCG	30931	23.36	0.53
Pro	CCA	10996	8.30	0.19
Pro	CCC	7252	5.48	0.12
Gln	CAA	20199	15.25	0.34
Gln	CAG	38453	29.04	0.66
Arg	AGG	1595	1.20	0.02
Arg	AGA	2530	1.91	0.03
Arg	CGA	4713	3.56	0.06
Arg	CGC	29499	22.28	0.40
Arg	CGG	7191	5.43	0.10
Arg	CGT	27939	21.10	0.38
Ser	AGC	21281	16.07	0.28
Ser	AGT	11428	8.63	0.15
Ser	TCT	11210	8.47	0.15
Ser	TCG	11963	9.03	0.16
Ser	TCC	11422	8.63	0.15
Ser	TCA	9412	7.11	0.12
Thr	ACA	8967	6.77	0.13
Thr	ACG	19294	14.57	0.27
Thr	ACT	11869	8.96	0.17
Thr	ACC	30795	23.26	0.43
Val	GTA	14522	10.97	0.15
Val	GTC	20124	15.20	0.21
Val	GTG	35000	26.43	0.37
Val	GTT	24331	18.37	0.26
Trp	TGG	20318	15.34	1.00
Tyr	TAT	21477	16.22	0.57
Tyr	TAC	16168	12.21	0.43
End	TAA	2728	2.06	0.65
End	TAG	281	0.21	0.07
End	TGA	1186	0.90	0.28