

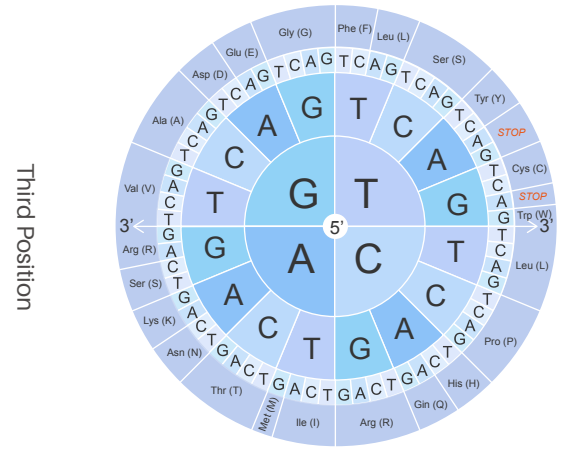
► Standard Codon Charts

cDNA Codon Table

Second Position

		T			C			A			G		
First Position	T	TTT	F	Phe	TCT	S	Ser	TAT	Y	Tyr	TGT	C	Cys
	C	TTC	F	Phe	TCC	S	Ser	TAC	Y	Tyr	TGC	C	Cys
		TTA	L	Leu	TCA	S	Ser	TAA	STOP		TGA	STOP	
		TTG	L	Leu	TCG	S	Ser	TAG	STOP		TGG	W	Trp
A	CTT	L	Leu	CCT	P	Pro	CAT	H	His	CGT	R	Arg	
	CTC	L	Leu	CCC	P	Pro	CAC	H	His	CGC	R	Arg	
	CTA	L	Leu	CCA	P	Pro	CAA	Q	Gln	CGA	R	Arg	
G	CTG	L	Leu	CCG	P	Pro	CAG	Q	Gln	CGG	R	Arg	
	ATT	I	Ile	ACT	T	Thr	AAT	N	Asn	AGT	S	Ser	
	ATC	I	Ile	ACC	T	Thr	AAC	N	Asn	AGC	S	Ser	
G	ATA	I	Ile	ACA	T	Thr	AAA	K	Lys	AGA	R	Arg	
	ATG	M	Met	ACG	T	Thr	AAG	K	Lys	AGG	R	Arg	
	GTT	V	Val	GCT	A	Ala	GAT	D	Asp	GGT	G	Gly	
G	GTC	V	Val	GCC	A	Ala	GAC	D	Asp	GGC	G	Gly	
	GTA	V	Val	GCA	A	Ala	GAA	E	Glu	GGA	G	Gly	
	GTG	V	Val	GCG	A	Ala	GAG	E	Glu	GGG	G	Gly	

cDNA Genetic Code

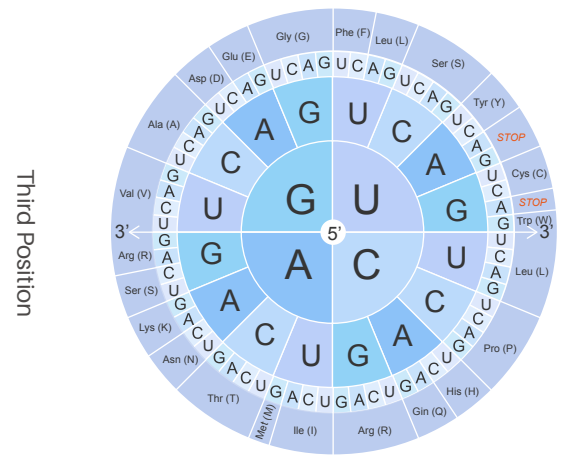


mRNA Codon Table

Second Position

		U			C			A			G		
First Position	U	UUU	F	Phe	UCU	S	Ser	UAU	Y	Tyr	UGU	C	Cys
	C	UUC	F	Phe	UCC	S	Ser	UAC	Y	Tyr	UGC	C	Cys
		UUA	L	Leu	UCA	S	Ser	UAA	STOP		UGA	STOP	
		UUG	L	Leu	UCG	S	Ser	UAG	STOP		UGG	W	Trp
A	CUU	L	Leu	CCU	P	Pro	CAU	H	His	CGU	R	Arg	
	CUC	L	Leu	CCC	P	Pro	CAC	H	His	CGC	R	Arg	
	CUA	L	Leu	CCA	P	Pro	CAA	Q	Gln	CGA	R	Arg	
G	CUG	L	Leu	CCG	P	Pro	CAG	Q	Gln	CGG	R	Arg	
	AUU	I	Ile	ACU	T	Thr	AAU	N	Asn	AGU	S	Ser	
	AUC	I	Ile	ACC	T	Thr	AAC	N	Asn	AGC	S	Ser	
G	AUA	I	Ile	ACA	T	Thr	AAA	K	Lys	AGA	R	Arg	
	AUG	M	Met	ACG	T	Thr	AAG	K	Lys	AGG	R	Arg	
	GUU	V	Val	GCU	A	Ala	GAU	D	Asp	GGU	G	Gly	
G	GUC	V	Val	GCC	A	Ala	GAC	D	Asp	GGC	G	Gly	
	GUA	V	Val	GCA	A	Ala	GAA	E	Glu	GGA	G	Gly	
	GUG	V	Val	GCG	A	Ala	GAG	E	Glu	GGG	G	Gly	

mRNA Genetic Code



GenScript Codon Table Tool shows standard genetic code, and also genetic codes for vertebrate mitochondrial, invertebrate mitochondrial, and other lower animals mitochondria or nuclear.

<https://www.genscript.com/tools/codon-table>

► Table:Amino acid

Amino acid	Three Letters Acronym	One-letter symbol
Alanine	Ala	A
Cystine	Cys	C
Asparticacid	Asp	D
Glutamicacid	Glu	E
Phenylalanine	Phe	F
Glycine	Gly	G
Histidine	His	H
Isoleucine	Ile	I
Lysine	Lys	K
Leucine	Leu	L
Methionine	Met	M
Asparagine	Asn	N
Proline	Pro	P
Glutarnine	Gln	Q
Arginine	Arg	R
Serine	Ser	S
Threonine	Thr	T
Valine	Val	V
Tryptophan	Trp	W
Tyrosine	Tyr	Y

► Codon Usage Frequency Table(chart)

Escherichia coli

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.58	22.1	80995
TTC	F	0.42	16.0	58774
TTA	L	0.14	14.3	52382
TTG	L	0.13	13.0	47500
TAT	Y	0.59	17.5	63937
TAC	Y	0.41	12.2	44631
TAA	*	0.61	2.0	7356
TAG	*	0.09	0.3	989
CTT	L	0.12	11.9	43449
CTC	L	0.10	10.2	37347
CTA	L	0.04	4.2	15409
CTG	L	0.47	48.4	177210
CAT	H	0.57	12.5	45879
CAC	H	0.43	9.3	34078
CAA	Q	0.34	14.6	53394
CAG	Q	0.66	28.4	104171
ATT	I	0.49	29.8	109072
ATC	I	0.39	23.7	86796
ATA	I	0.11	6.8	24984
ATG	M	1.00	26.4	96695
AAT	N	0.49	20.6	75436
AAC	N	0.51	21.4	78443
AAA	K	0.74	35.3	129137
AAG	K	0.26	12.4	45459
GTT	V	0.28	19.8	72584
GTC	V	0.20	14.3	52439
GTA	V	0.17	11.6	42420
GTG	V	0.35	24.4	89265
GAT	D	0.63	32.7	119939
GAC	D	0.37	19.2	70394
GAA	E	0.68	39.1	143353
GAG	E	0.32	18.7	68609

► Codon Usage Frequency Table(chart)

Escherichia coli

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.17	10.4	38027
TCC	S	0.15	9.1	33430
TCA	S	0.14	8.9	32715
TCG	S	0.14	8.5	31146
TGT	C	0.46	5.2	19138
TGC	C	0.54	6.1	22188
TGA	*	0.30	1.0	3623
TGG	W	1.00	13.9	50991
CCT	P	0.18	7.5	27340
CCC	P	0.13	5.4	19666
CCA	P	0.20	8.6	31534
CCG	P	0.49	20.9	76644
CGT	R	0.36	20.0	73197
CGC	R	0.36	19.7	72212
CGA	R	0.07	3.8	13844
CGG	R	0.11	5.9	21552
ACT	T	0.19	10.3	37842
ACC	T	0.40	22.0	80547
ACA	T	0.17	9.3	33910
ACG	T	0.25	13.7	50269
AGT	S	0.16	9.9	36097
AGC	S	0.25	15.2	55551
AGA	R	0.07	3.6	13152
AGG	R	0.04	2.1	7607
GCT	A	0.18	17.1	62479
GCC	A	0.26	24.2	88721
GCA	A	0.23	21.2	77547
GCG	A	0.33	30.1	110308
GGT	G	0.35	25.5	93325
GGC	G	0.37	27.1	99390
GGA	G	0.13	9.5	34799
GGG	G	0.15	11.3	41277

► Codon Usage Frequency Table(chart)

Human

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.45	16.9	336562
TTC	F	0.55	20.4	406571
TTA	L	0.07	7.2	143715
TTG	L	0.13	12.6	249879
TAT	Y	0.43	12.0	239268
TAC	Y	0.57	15.6	310695
TAA	*	0.28	0.7	14322
TAG	*	0.20	0.5	10915
CTT	L	0.13	12.8	253795
CTC	L	0.20	19.4	386182
CTA	L	0.07	6.9	138154
CTG	L	0.41	40.3	800774
CAT	H	0.41	10.4	207826
CAC	H	0.59	14.9	297048
CAA	Q	0.25	11.8	234785
CAG	Q	0.75	34.6	688316
ATT	I	0.36	15.7	313225
ATC	I	0.48	21.4	426570
ATA	I	0.16	7.1	140652
ATG	M	1.00	22.3	443795
AAT	N	0.46	16.7	331714
AAC	N	0.54	19.5	387148
AAA	K	0.42	24.0	476554
AAG	K	0.58	32.9	654280
GTT	V	0.18	10.9	216818
GTC	V	0.24	14.6	290874
GTA	V	0.11	7.0	139156
GTG	V	0.47	28.9	575438
GAT	D	0.46	22.3	443369
GAC	D	0.54	26.0	517579
GAA	E	0.42	29.0	577846
GAG	E	0.58	40.8	810842

▶ Codon Usage Frequency Table(chart)

Human

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.18	14.6	291040
TCC	S	0.22	17.4	346943
TCA	S	0.15	11.7	233110
TCG	S	0.06	4.5	89429
TGT	C	0.45	9.9	197293
TGC	C	0.55	12.2	243685
TGA	*	0.52	1.3	25383
TGG	W	1.00	12.8	255512
CCT	P	0.28	17.3	343793
CCC	P	0.33	20.0	397790
CCA	P	0.27	16.7	331944
CCG	P	0.11	7.0	139414
CGT	R	0.08	4.7	93458
CGC	R	0.19	10.9	217130
CGA	R	0.11	6.3	126113
CGG	R	0.21	11.9	235938
ACT	T	0.24	12.8	255582
ACC	T	0.36	19.2	382050
ACA	T	0.28	14.8	294223
ACG	T	0.12	6.2	123533
AGT	S	0.15	11.9	237404
AGC	S	0.24	19.4	385113
AGA	R	0.20	11.5	228151
AGG	R	0.20	11.4	227281
GCT	A	0.26	18.6	370873
GCC	A	0.40	28.5	567930
GCA	A	0.23	16.0	317338
GCG	A	0.11	7.6	150708
GGT	G	0.16	10.8	215544
GGC	G	0.34	22.8	453917
GGA	G	0.25	16.3	325243
GGG	G	0.25	16.4	326879

► Codon Usage Frequency Table(chart)

Mouse

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.43	17.1	244935
TTC	F	0.57	22.3	319002
TTA	L	0.06	6.5	92974
TTG	L	0.13	13.3	189840
TAT	Y	0.43	12.2	175198
TAC	Y	0.58	16.5	236579
TAA	*	0.26	0.6	8861
TAG	*	0.22	0.5	7491
CTT	L	0.13	13.2	188236
CTC	L	0.20	20.3	290198
CTA	L	0.08	8.0	114707
CTG	L	0.39	40.0	571592
CAT	H	0.40	10.2	145279
CAC	H	0.60	15.2	217261
CAA	Q	0.25	11.4	163794
CAG	Q	0.75	34.0	486041
ATT	I	0.34	15.6	223528
ATC	I	0.50	23.2	332072
ATA	I	0.16	7.2	103441
ATG	M	1.00	23.1	330431
AAT	N	0.43	15.5	221760
AAC	N	0.57	20.7	296083
AAA	K	0.39	21.3	305128
AAG	K	0.61	33.7	482643
GTT	V	0.17	10.7	152706
GTC	V	0.25	15.7	224465
GTA	V	0.12	7.4	105532
GTG	V	0.46	29.1	416428
GAT	D	0.44	21.1	301359
GAC	D	0.56	26.6	380355
GAA	E	0.40	26.5	379216
GAG	E	0.60	39.4	563999

► Codon Usage Frequency Table(chart)

Mouse

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.19	15.9	228046
TCC	S	0.22	18.1	258787
TCA	S	0.14	11.6	165371
TCG	S	0.05	4.3	61116
TGT	C	0.48	11.1	158573
TGC	C	0.52	12.1	173509
TGA	*	0.52	1.2	17004
TGG	W	1.00	12.4	177261
CCT	P	0.30	18.3	261478
CCC	P	0.31	18.4	262874
CCA	P	0.28	17.1	244064
CCG	P	0.10	6.3	89477
CGT	R	0.09	4.7	66962
CGC	R	0.18	9.5	136330
CGA	R	0.12	6.6	94626
CGG	R	0.19	10.3	147905
ACT	T	0.25	13.6	194120
ACC	T	0.35	19.2	274588
ACA	T	0.29	15.9	227958
ACG	T	0.11	5.8	82653
AGT	S	0.15	12.3	176056
AGC	S	0.24	19.5	279098
AGA	R	0.21	11.4	163062
AGG	R	0.22	11.7	167166
GCT	A	0.29	20.1	288132
GCC	A	0.38	26.4	378142
GCA	A	0.23	15.8	226309
GCG	A	0.10	6.6	94463
GGT	G	0.18	11.5	164971
GGC	G	0.33	21.9	312846
GGA	G	0.26	16.9	241435
GGG	G	0.23	15.4	220474

► Codon Usage Frequency Table(chart)

Yeast

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.59	26.1	147662
TTC	F	0.41	18.2	103110
TTA	L	0.28	26.4	149466
TTG	L	0.29	27.1	153307
TAT	Y	0.56	18.8	106420
TAC	Y	0.44	14.7	83100
TAA	*	0.48	1.0	5596
TAG	*	0.24	0.5	2681
CTT	L	0.13	12.2	68959
CTC	L	0.06	5.4	30501
CTA	L	0.14	13.4	75775
CTG	L	0.11	10.4	59027
CAT	H	0.64	13.7	77724
CAC	H	0.36	7.8	44082
CAA	Q	0.69	27.5	155751
CAG	Q	0.31	12.2	68932
ATT	I	0.46	30.2	171272
ATC	I	0.26	17.1	96735
ATA	I	0.27	17.8	100930
ATG	M	1.00	20.9	118274
AAT	N	0.59	36.0	204015
AAC	N	0.41	24.9	141103
AAA	K	0.58	42.2	239186
AAG	K	0.42	30.8	174250
GTT	V	0.39	22.0	124665
GTC	V	0.21	11.6	65664
GTA	V	0.21	11.8	66649
GTG	V	0.19	10.6	60286
GAT	D	0.65	37.8	214363
GAC	D	0.35	20.3	114918
GAA	E	0.71	45.9	260082
GAG	E	0.29	19.1	108411

► Codon Usage Frequency Table(chart)

Yeast

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.26	23.6	133502
TCC	S	0.16	14.2	80612
TCA	S	0.21	18.8	106266
TCG	S	0.10	8.6	48524
TGT	C	0.63	8.0	45222
TGC	C	0.37	4.7	26520
TGA	*	0.29	0.6	3516
TGG	W	1.00	10.3	58416
CCT	P	0.31	13.6	77061
CCC	P	0.15	6.8	38414
CCA	P	0.41	18.2	103062
CCG	P	0.12	5.3	29916
CGT	R	0.15	6.5	36693
CGC	R	0.06	2.6	14645
CGA	R	0.07	3.0	17111
CGG	R	0.04	1.7	9872
ACT	T	0.35	20.3	114746
ACC	T	0.22	12.6	71204
ACA	T	0.30	17.8	100680
ACG	T	0.13	7.9	44995
AGT	S	0.16	14.2	80293
AGC	S	0.11	9.7	54825
AGA	R	0.48	21.3	120587
AGG	R	0.21	9.2	52322
GCT	A	0.38	21.1	119402
GCC	A	0.22	12.5	71065
GCA	A	0.29	16.2	91502
GCG	A	0.11	6.1	34754
GGT	G	0.47	23.9	135417
GGC	G	0.19	9.7	54977
GGA	G	0.22	10.9	61825
GGG	G	0.12	6.0	33885

► Codon Usage Frequency Table(chart)

Insect

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.25	9.2	263
TTC	F	0.75	27.3	786
TTA	L	0.07	5.7	165
TTG	L	0.20	15.9	458
TAT	Y	0.25	8.1	232
TAC	Y	0.75	24.1	694
TAA	*	0.68	2.8	81
TAG	*	0.15	0.6	18
CTT	L	0.13	10.3	297
CTC	L	0.22	18.1	521
CTA	L	0.08	6.1	175
CTG	L	0.31	25.2	724
CAT	H	0.32	7.9	226
CAC	H	0.68	16.6	476
CAA	Q	0.39	15.2	437
CAG	Q	0.61	23.3	671
ATT	I	0.29	15.1	434
ATC	I	0.59	30.4	873
ATA	I	0.12	6.0	173
ATG	M	1.00	26.8	770
AAT	N	0.29	11.7	336
AAC	N	0.71	28.3	814
AAA	K	0.31	26.0	746
AAG	K	0.69	57.2	1644
GTT	V	0.20	14.2	407
GTC	V	0.30	21.4	614
GTA	V	0.15	10.8	310
GTG	V	0.35	25.4	731
GAT	D	0.37	19.1	550
GAC	D	0.63	32.9	947
GAA	E	0.41	25.0	718
GAG	E	0.59	36.2	1041

► Codon Usage Frequency Table(chart)

Insect

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.19	10.8	310
TCC	S	0.24	14.1	405
TCA	S	0.16	9.2	264
TCG	S	0.12	7.2	208
TGT	C	0.35	6.9	199
TGC	C	0.65	12.8	369
TGA	*	0.17	0.7	20
TGG	W	1.00	11.3	325
CCT	P	0.29	14.3	410
CCC	P	0.31	14.8	425
CCA	P	0.24	11.5	331
CCG	P	0.16	7.9	226
CGT	R	0.25	17.2	495
CGC	R	0.24	16.4	472
CGA	R	0.08	5.5	157
CGG	R	0.05	3.4	98
ACT	T	0.27	13.8	397
ACC	T	0.36	18.5	531
ACA	T	0.21	10.7	308
ACG	T	0.16	8.2	235
AGT	S	0.12	6.7	194
AGC	S	0.17	10.1	289
AGA	R	0.16	11.2	322
AGG	R	0.21	14.3	411
GCT	A	0.36	27.0	775
GCC	A	0.30	22.7	653
GCA	A	0.16	11.8	339
GCG	A	0.18	13.3	381
GGT	G	0.36	23.1	663
GGC	G	0.32	20.6	592
GGA	G	0.27	17.8	511
GGG	G	0.05	3.3	96

► Codon Usage Frequency Table(chart)

Drosophila melanogaster

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.37	13.1	241160
TTC	F	0.63	21.9	402987
TTA	L	0.05	4.4	80654
TTG	L	0.18	16.0	294929
TAT	Y	0.37	10.7	196987
TAC	Y	0.63	18.4	338493
TAA	*	0.42	0.8	14550
TAG	*	0.32	0.6	11721
CTT	L	0.10	8.9	164079
CTC	L	0.15	13.9	255170
CTA	L	0.09	8.2	150674
CTG	L	0.43	38.5	709057
CAT	H	0.40	10.5	194039
CAC	H	0.60	16.0	294555
CAA	Q	0.30	15.6	287398
CAG	Q	0.70	36.7	674575
ATT	I	0.34	16.4	302063
ATC	I	0.47	22.9	421851
ATA	I	0.19	9.3	171610
ATG	M	1.00	23.5	431822
AAT	N	0.44	21.0	385441
AAC	N	0.56	26.3	483430
AAA	K	0.29	16.5	304266
AAG	K	0.71	39.6	729428
GTT	V	0.18	10.9	200189
GTC	V	0.24	13.9	254974
GTA	V	0.11	6.3	116035
GTG	V	0.47	28.0	514471
GAT	D	0.53	27.4	504880
GAC	D	0.47	24.7	454677
GAA	E	0.33	20.9	383850
GAG	E	0.67	42.9	789807

► Codon Usage Frequency Table(chart)

Drosophila melanogaster

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.08	6.9	127758
TCC	S	0.24	19.5	359352
TCA	S	0.09	7.8	142775
TCG	S	0.20	16.7	307642
TGT	C	0.29	5.3	98056
TGC	C	0.71	13.1	241823
TGA	*	0.26	0.5	9358
TGG	W	1.00	9.8	181191
CCT	P	0.13	6.9	127584
CCC	P	0.33	18.0	331799
CCA	P	0.25	13.5	248604
CCG	P	0.29	16.0	293998
CGT	R	0.16	8.8	161800
CGC	R	0.33	18.2	334733
CGA	R	0.15	8.5	155637
CGG	R	0.15	8.2	151728
ACT	T	0.17	9.5	175261
ACC	T	0.38	21.4	393516
ACA	T	0.19	10.9	201178
ACG	T	0.26	14.5	267095
AGT	S	0.14	11.5	211452
AGC	S	0.25	20.5	377750
AGA	R	0.09	5.1	93738
AGG	R	0.11	6.3	115430
GCT	A	0.19	14.4	265295
GCC	A	0.45	33.7	620889
GCA	A	0.17	12.7	234549
GCG	A	0.19	14.1	259119
GGT	G	0.21	13.2	243460
GGC	G	0.43	26.8	492283
GGA	G	0.29	17.8	326983
GGG	G	0.07	4.6	85472

► Codon Usage Frequency Table(chart)

Arabidopsis thaliana

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.51	21.9	534456
TTC	F	0.49	20.7	505253
TTA	L	0.13	12.6	308336
TTG	L	0.22	20.9	508909
TAT	Y	0.52	14.8	359583
TAC	Y	0.48	13.9	337738
TAA	*	0.36	0.9	22128
TAG	*	0.20	0.5	12250
CTT	L	0.26	24.2	589767
CTC	L	0.17	16.1	391502
CTA	L	0.11	9.9	240784
CTG	L	0.11	9.9	240472
CAT	H	0.61	13.7	334012
CAC	H	0.39	8.7	211635
CAA	Q	0.56	19.3	470475
CAG	Q	0.44	15.2	371091
ATT	I	0.41	21.7	528593
ATC	I	0.35	18.6	452968
ATA	I	0.24	12.5	305594
ATG	M	1.00	24.4	594807
AAT	N	0.52	22.3	543539
AAC	N	0.48	20.9	508277
AAA	K	0.48	30.7	749448
AAG	K	0.52	32.8	798966
GTT	V	0.41	27.4	668037
GTC	V	0.19	12.8	312848
GTA	V	0.15	10.0	242644
GTG	V	0.26	17.4	423929
GAT	D	0.68	36.7	895566
GAC	D	0.32	17.2	420193
GAA	E	0.52	34.3	836077
GAG	E	0.49	32.3	786970

► Codon Usage Frequency Table(chart)

Arabidopsis thaliana

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.28	25.0	610403
TCC	S	0.13	11.1	270545
TCA	S	0.20	18.1	440264
TCG	S	0.10	9.2	223500
TGT	C	0.59	10.4	254179
TGC	C	0.41	7.1	171924
TGA	*	0.44	1.1	26304
TGG	W	1.00	12.5	304101
CCT	P	0.38	18.7	455638
CCC	P	0.11	5.3	129838
CCA	P	0.33	16.2	393957
CCG	P	0.17	8.5	207684
CGT	R	0.17	9.0	220192
CGC	R	0.07	3.8	91869
CGA	R	0.12	6.3	152537
CGG	R	0.09	4.8	117195
ACT	T	0.34	17.7	431031
ACC	T	0.20	10.4	252577
ACA	T	0.30	15.7	381774
ACG	T	0.15	7.7	186589
AGT	S	0.16	13.9	339903
AGC	S	0.13	11.2	273815
AGA	R	0.35	18.8	457927
AGG	R	0.20	10.9	266406
GCT	A	0.44	28.6	697575
GCC	A	0.16	10.4	253877
GCA	A	0.27	17.6	427842
GCG	A	0.14	8.9	217886
GGT	G	0.34	22.4	546544
GGC	G	0.14	9.2	223041
GGA	G	0.37	24.3	592219
GGG	G	0.15	10.2	249165

► Codon Usage Frequency Table(chart)

Zea mays(Maize)

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.37	13.9	10405
TTC	F	0.63	24.1	18021
TTA	L	0.08	7.8	5819
TTG	L	0.15	13.7	10227
TAT	Y	0.37	10.7	7989
TAC	Y	0.63	18.6	13868
TAA	*	0.24	0.6	447
TAG	*	0.32	0.8	568
CTT	L	0.18	16.4	12255
CTC	L	0.25	23.6	17598
CTA	L	0.08	7.8	5856
CTG	L	0.25	23.6	17602
CAT	H	0.43	10.6	7896
CAC	H	0.57	13.9	10355
CAA	Q	0.39	15.0	11189
CAG	Q	0.61	23.0	17187
ATT	I	0.33	16.0	11943
ATC	I	0.47	22.8	17033
ATA	I	0.20	9.4	7049
ATG	M	1.00	23.7	17706
AAT	N	0.40	14.7	10987
AAC	N	0.60	21.8	16252
AAA	K	0.30	16.8	12567
AAG	K	0.70	39.5	29494
GTT	V	0.24	16.4	12238
GTC	V	0.29	19.9	14896
GTA	V	0.11	7.2	5370
GTG	V	0.36	24.5	18314
GAT	D	0.44	23.8	17764
GAC	D	0.56	30.5	22752
GAA	E	0.36	21.8	16250
GAG	E	0.64	39.4	29427

► Codon Usage Frequency Table(chart)

Zea mays(Maize)

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.17	12.6	9418
TCC	S	0.22	15.8	11779
TCA	S	0.15	11.1	8270
TCG	S	0.14	9.9	7391
TGT	C	0.34	6.0	4502
TGC	C	0.66	11.6	8650
TGA	*	0.44	1.1	828
TGG	W	1.00	13.1	9747
CCT	P	0.24	13.4	10004
CCC	P	0.24	13.3	9946
CCA	P	0.26	14.2	10609
CCG	P	0.26	14.5	10802
CGT	R	0.12	6.6	4912
CGC	R	0.23	13.1	9761
CGA	R	0.09	4.9	3662
CGG	R	0.15	8.6	6442
ACT	T	0.24	12.0	8958
ACC	T	0.33	16.2	12066
ACA	T	0.22	10.7	7987
ACG	T	0.21	10.2	7650
AGT	S	0.11	8.3	6219
AGC	S	0.21	15.2	11381
AGA	R	0.16	9.2	6855
AGG	R	0.25	14.1	10527
GCT	A	0.25	22.4	16694
GCC	A	0.33	29.3	21904
GCA	A	0.19	16.6	12429
GCG	A	0.23	20.9	15610
GGT	G	0.21	15.2	11380
GGC	G	0.39	28.2	21059
GGA	G	0.20	14.5	10838
GGG	G	0.21	15.1	11275

► Codon Usage Frequency Table(chart)

Tobacco

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TTT	F	0.58	24.4	10395
TTC	F	0.42	17.8	7569
TTA	L	0.14	12.5	5334
TTG	L	0.24	21.9	9315
TAT	Y	0.57	17.8	7573
TAC	Y	0.43	13.5	5737
TAA	*	0.41	1.1	486
TAG	*	0.19	0.5	224
CTT	L	0.26	23.7	10079
CTC	L	0.14	12.2	5176
CTA	L	0.10	9.2	3935
CTG	L	0.12	10.4	4431
CAT	H	0.61	13.3	5650
CAC	H	0.39	8.6	3672
CAA	Q	0.58	21.3	9069
CAG	Q	0.42	15.5	6618
ATT	I	0.50	27.3	11626
ATC	I	0.25	13.7	5823
ATA	I	0.25	13.9	5914
ATG	M	1.00	24.8	10543
AAT	N	0.60	27.4	11684
AAC	N	0.40	18.6	7922
AAA	K	0.49	32.3	13750
AAG	K	0.51	33.9	14437
GTT	V	0.41	27.0	11505
GTC	V	0.17	11.4	4855
GTA	V	0.17	11.2	4755
GTG	V	0.25	16.6	7057
GAT	D	0.68	36.7	15612
GAC	D	0.32	16.9	7219
GAA	E	0.55	35.0	14896
GAG	E	0.45	29.1	12401

► Codon Usage Frequency Table(chart)

Tobacco

Triplet	Amino acid	Fraction	Frequency/ Thousand	Number
TCT	S	0.26	20.3	8634
TCC	S	0.14	10.7	4542
TCA	S	0.23	17.7	7543
TCG	S	0.07	5.4	2290
TGT	C	0.57	9.9	4233
TGC	C	0.43	7.6	3225
TGA	*	0.41	1.1	455
TGG	W	1.00	11.6	4921
CCT	P	0.37	18.8	8012
CCC	P	0.13	6.7	2862
CCA	P	0.40	20.0	8540
CCG	P	0.10	4.9	2098
CGT	R	0.15	7.4	3173
CGC	R	0.08	4.0	1688
CGA	R	0.11	5.1	2179
CGG	R	0.08	3.7	1573
ACT	T	0.39	20.8	8844
ACC	T	0.19	10.0	4251
ACA	T	0.33	17.4	7420
ACG	T	0.09	4.6	1946
AGT	S	0.17	13.3	5657
AGC	S	0.13	10.0	4262
AGA	R	0.32	15.5	6586
AGG	R	0.26	12.5	5309
GCT	A	0.44	32.0	13610
GCC	A	0.17	12.6	5373
GCA	A	0.31	23.0	9805
GCG	A	0.08	5.8	2490
GGT	G	0.34	23.1	9831
GGC	G	0.17	11.4	4854
GGA	G	0.34	23.5	10006
GGG	G	0.15	10.5	4482

GenScript Codon Usage Frequency Table(chart) Tool shows commonly used genetic codon frequency table in expression host organisms including Escherichia coli and other common host organisms.

<https://www.genscript.com/tools/codon-frequency-table>