The Genetic Code for Computational Scientists

First Position	Second Position of Codon: T	C	A	G	Third Position
T	TTT Phenylalanine (Phe) [F] TTC	TCT TCC TCA TCG Serine (Ser) [S]	TAT Tyrosine (Tyr) [Y] TAC	TGT Cysteine (Cys) [C] TGC	**T** **C**
	TTA TTG Leucine (Leu) [L]		TAA Stop (*Ter*) [end] TAG	TGA Stop (*Ter*) [end] TGG Tryptophan (Trp) [W]	**A** **G**
C	CTT CTC CTA CTG Leucine (Leu) [L]	CCT CCC CCA CCG Proline (Pro) [P]	CAT Histidine (His) [H] CAC	CGT CGC CGA CGG Arginine (Arg) [R]	**T** **C** **A** **G**
			CAA Glutamine (Gln) [Q] CAG		
A	ATT ATC Isoleucine (Ile) [I] ATA	ACT ACC ACA ACG Threonine (Thr) [T]	AAT Asparagine (Asn) [N] AAC	AGT Serine (Ser) [S] AGC	**T** **C**
	ATG Methionine (Met) [M]		AAA Lysine (Lys) [K] AAG	AGA AGG Arginine (Arg) [R]	**A** **G**
G	GTT GTC GTA GTG Valine (Val) [V]	GCT GCC GCA GCG Alanine (Ala) [A]	GAT Aspartic Acid (Asp) [D] GAC	GGT GGC GGA GGG Glycine (Gly) [G]	**T** **C** **A** **G**
			GAA Glutamic Acid (Glu) [E] GAG		

NOTES:

1. All 64 three-letter codons have a unique meaning. For most **(e.g., TTG)**, the meaning is the amino acid **(Leucine)** given to the right of the codon in the table. For each amino acid, its three-letter abbreviation is given in parentheses **(Leu)** and its 1-letter abbreviation in square brackets **[L]**.

   There are also three Stop codons: TAA, TAG, and TGA.

2. A number of the amino acids and their codons are color coded to help distinguish the correspondence.

   - Leucine is coded orange-red.
   - Serine is coded turquoise.
   - The Stop codons are red.
   - Histidine is coded dark blue.
   - Arginine is coded magenta.
   - Methionine, whose code is the Start codon, is coded dark green.
   - Asparagine is coded maroon.
   - Aspartic Acid is coded peru.