

# Amino acid and Codon Table


Amino acid	Valine (Val/V)	Leucine (Leu/L)	Glycine (Gly/G)	Asparagine (Asn/N)	Serine (Ser/S)	Lysine (Lys/K)
Molecular formula	C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub>	C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>	C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>3</sub>	C <sub>3</sub> H <sub>7</sub> NO <sub>3</sub>	C <sub>6</sub> H <sub>14</sub> N <sub>2</sub> O <sub>2</sub>
MW (g/mol)	117.15	131.17	75.07	132.12	105.09	146.19
Alanine (Ala/A)	Phenylalanine (Phe/F)	Isoleucine (Ile/I)	Cysteine (Cys/C)	Glutamine (Gln/Q)	Aspartate (Asp/D)	Arginine (Arg/R)
C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	C <sub>9</sub> H <sub>11</sub> NO <sub>2</sub>	C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub> S	C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>3</sub>	C <sub>4</sub> H <sub>7</sub> NO <sub>4</sub>	C <sub>6</sub> H <sub>14</sub> N <sub>4</sub> O <sub>2</sub>
89.09	165.19	131.17	121.16	146.14	133.11	174.20
Proline (Pro/P)	Methionine (Met/M)	Tryptophan (Trp/W)	Tyrosine (Tyr/Y)	Threonine (Thr/T)	Glutamate (Glu/E)	Histidine (His/H)
C <sub>5</sub> H <sub>9</sub> NO <sub>2</sub>	C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub> S	C <sub>11</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub>	C <sub>9</sub> H <sub>11</sub> NO <sub>3</sub>	C <sub>4</sub> H <sub>9</sub> NO <sub>3</sub>	C <sub>5</sub> H <sub>9</sub> NO <sub>4</sub>	C <sub>6</sub> H <sub>9</sub> N <sub>3</sub> O <sub>2</sub>
115.13	149.21	204.23	181.19	119.12	147.13	155.16

**Hydrophobic amino acids**

**Uncharged polar amino acids**

**Negatively charged amino acids**

**Positively charged amino acids**



Scientific ToolKit

	U	C	A	G	
U	UUU	UCU	UAU	UGU	U
	UUC	UCC	UAC	UGC	C
	UUA	UCA	UAA	UGA	A
	UUG	UCG	UAG	UGG	G
C	CUU	CCU	CAU	CGU	U
	CUC	CCC	CAC	CGC	C
	CUA	CCA	CAA	CGA	A
	CUG	CCG	CAG	CGG	G
A	AUU	ACU	AAU	AGU	U
	AUC	ACC	AAC	AGC	C
	AUA	ACA	AAA	AGA	A
	AUG	ACG	AAG	AGG	G
G	GUU	GCU	GAU	GGU	U
	GUC	GCC	GAC	GGC	C
	GUA	GCA	GAA	GGA	A
	GUG	GCG	GAG	GGG	G

Sources

pKs values: D. Voet, J. G. Voet, Biochemistry, 4. Ed., p. 68–69, WILEY, 2010 USA

Amino acids were drawn with: ACD/ChemSketch, version 2015.2.5, Advanced Chemistry Development, Inc., Toronto, ON, Canada, www.acdlabs.com, 2015.