

Amino Acids List

AA Name	Abbrev.		Structure	AA Name	Abbrev.		Structure
Alanine	Ala	A	$\begin{array}{c} \text{CH}_3 \\ \\ \text{-NH-CH-CO-} \end{array}$	Leucine	Leu	L	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2\text{-CH-CH}_2 \\ \\ \text{-NH-CH-CO-} \end{array}$
Arginine	Arg	R	$\begin{array}{c} \text{NH}_2 \\ \\ \text{CH}_2\text{CH}_2\text{CH}_2\text{-NH-C} \\ \\ \text{-NH-CH-CO-} \\ \\ \text{NH} \end{array}$	Lysine	Lys	K	$\begin{array}{c} \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{NH}_2 \\ \\ \text{-NH-CH-CO-} \end{array}$
Asparagine	Asn	N	$\begin{array}{c} \text{O} \\ \\ \text{CH}_2\text{-C-NH}_2 \\ \\ \text{-NH-CH-CO-} \end{array}$	Methionine	Met	M	$\begin{array}{c} \text{CH}_2\text{CH}_2\text{S-CH}_3 \\ \\ \text{-NH-CH-CO-} \end{array}$
Aspartic acid	Asp	D	$\begin{array}{c} \text{O} \\ \\ \text{CH}_2\text{-C-OH} \\ \\ \text{-NH-CH-CO-} \end{array}$	Phenylalanine	Phe	F	$\begin{array}{c} \text{CH}_2\text{-} \langle \text{benzene ring} \rangle \\ \\ \text{-NH-CH-CO-} \end{array}$
Cysteine	Cys	C	$\begin{array}{c} \text{H}_2\text{C-SH} \\ \\ \text{-NH-CH-CO-} \end{array}$	Proline	Pro	P	$\begin{array}{c} \text{CH}_2 \\ \\ \text{H}_2\text{C-CH}_2 \\ \\ \text{-N-CH-CO-} \end{array}$
Glutamine	Gln	Q	$\begin{array}{c} \text{O} \\ \\ \text{CH}_2\text{CH}_2\text{-C-NH}_2 \\ \\ \text{-NH-CH-CO-} \end{array}$	Serine	Ser	S	$\begin{array}{c} \text{CH}_2\text{-OH} \\ \\ \text{-NH-CH-CO-} \end{array}$
Glutamic acid	Glu	E	$\begin{array}{c} \text{O} \\ \\ \text{CH}_2\text{CH}_2\text{-C-OH} \\ \\ \text{-NH-CH-CO-} \end{array}$	Threonine	Thr	T	$\begin{array}{c} \text{OH CH}_3 \\ \quad \\ \text{CH} \\ \\ \text{-NH-CH-CO-} \end{array}$
Glycine	Gly	G	$\text{-NH-CH}_2\text{-CO-}$	Tryptophan	Trp	W	$\begin{array}{c} \text{H} \\ \\ \text{CH} \\ \\ \text{CH}_2\text{-} \langle \text{benzene ring} \rangle \\ \\ \text{-NH-CH-CO-} \end{array}$
Histidine	His	H	$\begin{array}{c} \text{H} \\ \\ \text{N} \\ \\ \text{CH}_2 \\ \\ \text{-NH-CH-CO-} \end{array}$	Tyrosine	Tyr	Y	$\begin{array}{c} \text{CH}_2\text{-} \langle \text{benzene ring} \rangle \text{-OH} \\ \\ \text{-NH-CH-CO-} \end{array}$
Isoleucine	Ile	I	$\begin{array}{c} \text{CH}_3 \\ \\ \text{HC-CH}_2\text{CH}_2 \\ \\ \text{-NH-CH-CO-} \end{array}$	Valine	Val	V	$\begin{array}{c} \text{CH}_3 \text{ CH}_3 \\ \quad \\ \text{CH} \\ \\ \text{-NH-CH-CO-} \end{array}$

	A	A	A	A	C	G	G	G	H	I	L	L	M	P	P	S	T	T	T	V
	L	R	S	S	Y	L	L	L	I	L	E	Y	E	H	R	E	H	R	Y	A
	A	G	N	P	S	U	N	Y	S	E	U	S	T	E	O	R	R	P	R	L
Acidic (negative)				D		E														
Basic (positive)		R							H			K								
Charged		R		D		E			H			K								
Neutral	A		N		C		Q	G	H	I	L		M	F	P	S	T	W	Y	V
Hydrophobic (nonpolar)	A							G		I	L		M	F	P			W	Y	V
Hydrophilic (polar)		R	N	D	C	E	Q		H			K				S	T			

*Chemical properties as listed in RasMol Reference Manual (by Roger Sayle)

*Amino acid structures from www.ionsource.com

www.mybiology.com