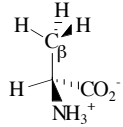
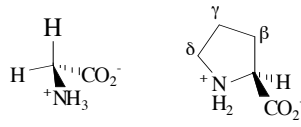


Vanilla



Alanine (Ala, A)

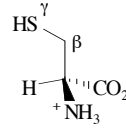
Structurally Strange



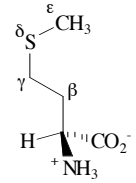
Glycine (Gly, G)

Proline (Pro, P)

S-Containing

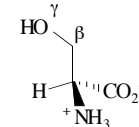


Cysteine (Cys, C)

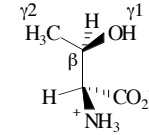


Methionine (Met, M)

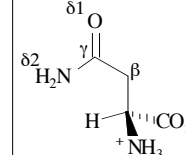
Polar, No Charge



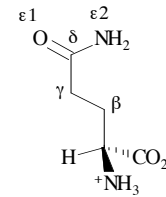
Serine (Ser, S)



Threonine (Thr, T)

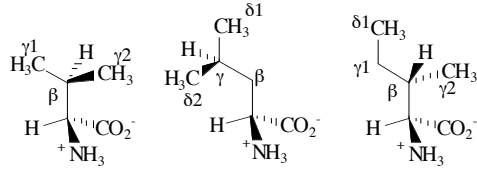


Asparagine (Asn, N)



Glutamine (Gln, Q)

Aliphatic Non-Polar

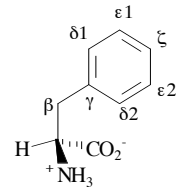


Valine (Val, V)

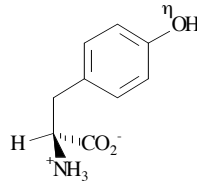
Leucine (Leu, L)

Isoleucine (Ile, I)

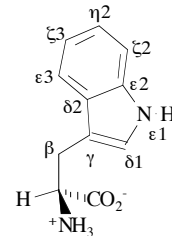
Aromatic "Non-Polar"



Phenylalanine (Phe, F)

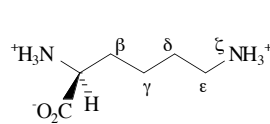


Tyrosine (Tyr, Y)

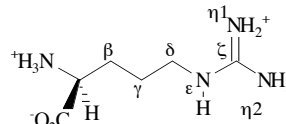


Tryptophan (Trp, W)

Basic

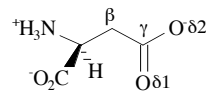


Lysine (Lys, K)

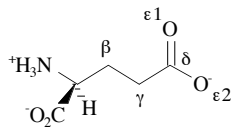


Arginine (Arg, R)

Acidic

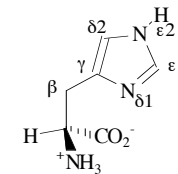


Aspartate (Asp, D)



Glutamate (Glu, E)

Gold



Histidine (His, H)

# pK<sub>a</sub> Data for Amino Acids

<b>Molecule</b>	<b>Functionality</b>	<b>pK<sub>a</sub></b>
Glycine	$\alpha$ -Ammonium group	9.6
Glycine	$\alpha$ -Carboxylic acid	2.3
Aspartic acid	$\gamma$ -Carboxylic acid	4.0
Glutamic acid	$\delta$ -Carboxylic acid	4.4
Histidine	Imidazolium group	6.8
Cysteine	Sulfhydryl group	8.0
Tyrosine	Phenolic hydroxyl group	10.2
Lysine	$\epsilon$ -Ammonium group	10.7
Arginine	Guanidinium group	12.0

# $\Delta\Delta G$ of Transfer to Octanol

Amino Acid	Abbreviations	$\Delta\Delta G_{\text{transfer}}$ (kcal/mol)
Isoleucine	Ile, I	-4.00
Leucine	Leu, L	-4.00
Valine	Val, V	-3.11
Phenylalanine	Phe, F	-2.05
Methionine	Met, M	-1.42
Tryptophan	Trp, W	-1.40
Alanine	Ala, A	-0.87
Cysteine	Cys, C	-0.34
<b>Glycine</b>	<b>Gly, G</b>	<b>0</b>
Tyrosine	Tyr, Y	1.09
Threonine	Thr, T	3.53
Serine	Ser, S	4.36
Asparagine	Asn, N	5.22
Histidine	His, H	5.63
Glutamine	Gln, Q	6.51
Lysine	Lys, K	6.52
Glutamic Acid	Glu, E	7.78
Aspartic Acid	Asp, D	9.71
Arginine	Arg, R	15.93