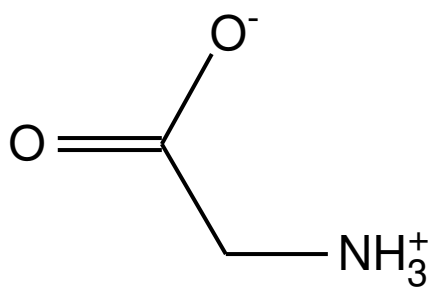


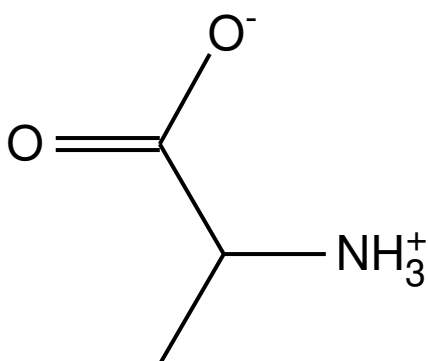
Amino Acids

Key Points

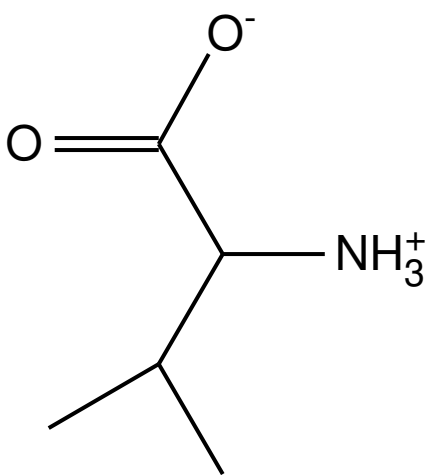
Phosphorylated: S, T, Y	K	pKa = 10.5
Branched: L, I, V	R	pKa = 12.5
C-terminus: pKa = 2	H	pKa = 6
N-terminus: pKa = 9	D	pKa = 4
Phosphate: pKa = 2, 7	E	pKa = 4



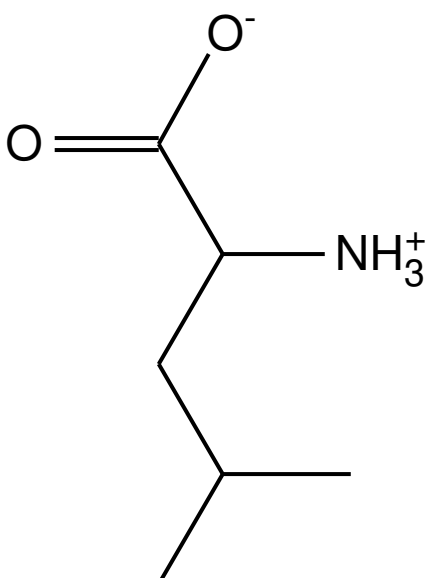
Glycine
Gly
G



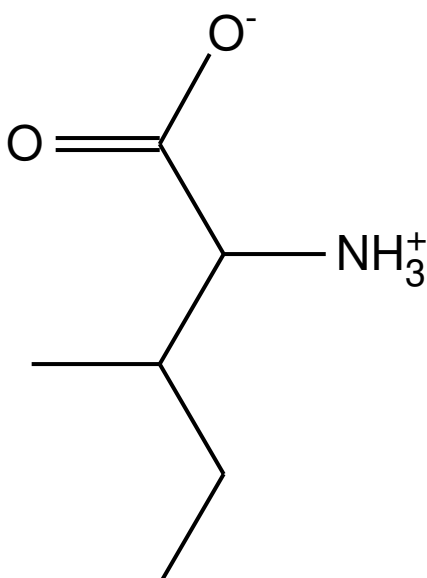
Alanine
Ala
A



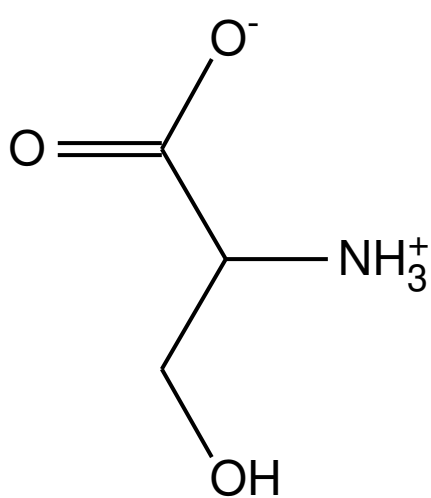
Valine
Val
V



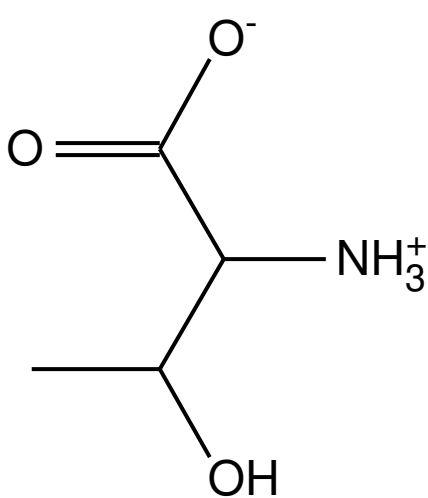
Leucine
Leu
L



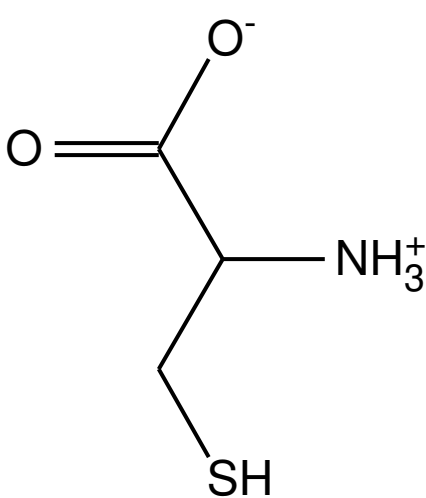
Isoleucine
Ile
I



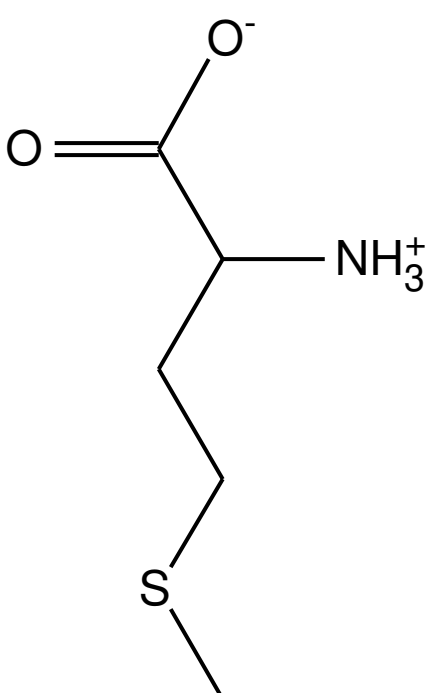
Serine
Ser
S



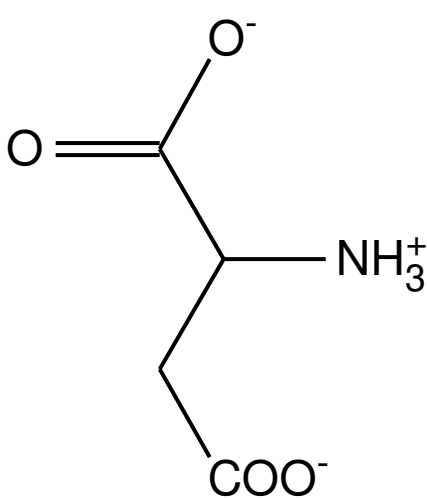
Threonine
Thr
T



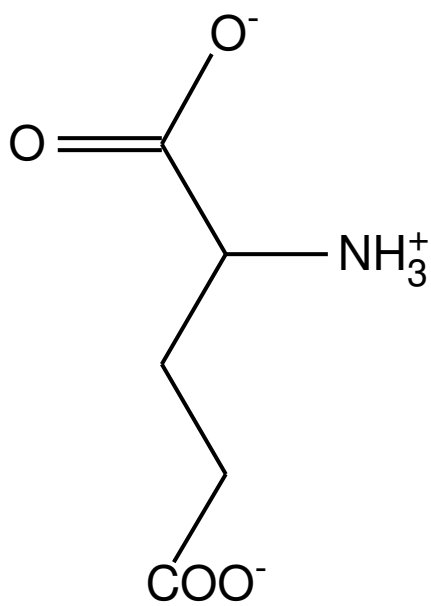
Cysteine
Cys
C



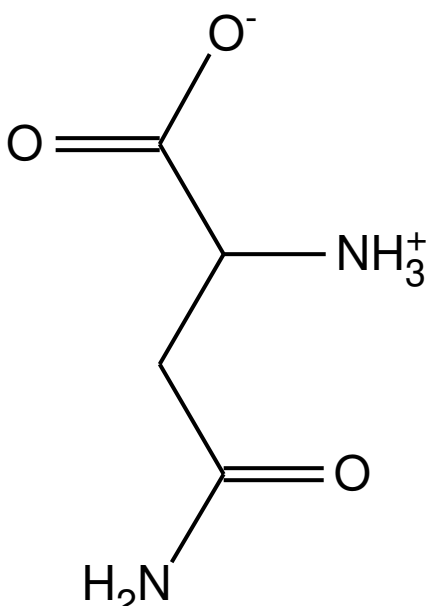
Methionine
Met
M



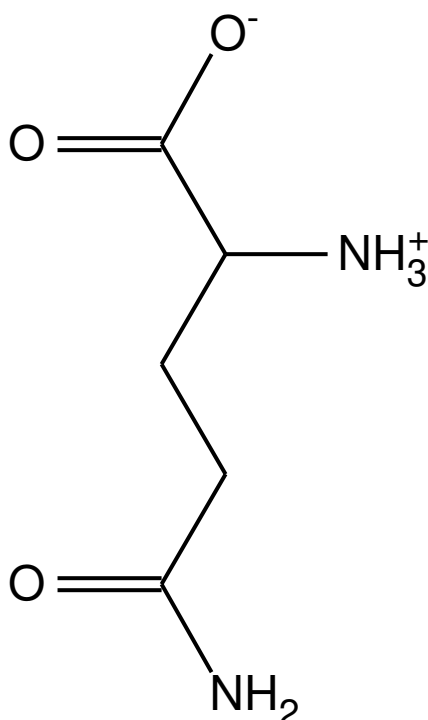
Aspartate
Asp
D



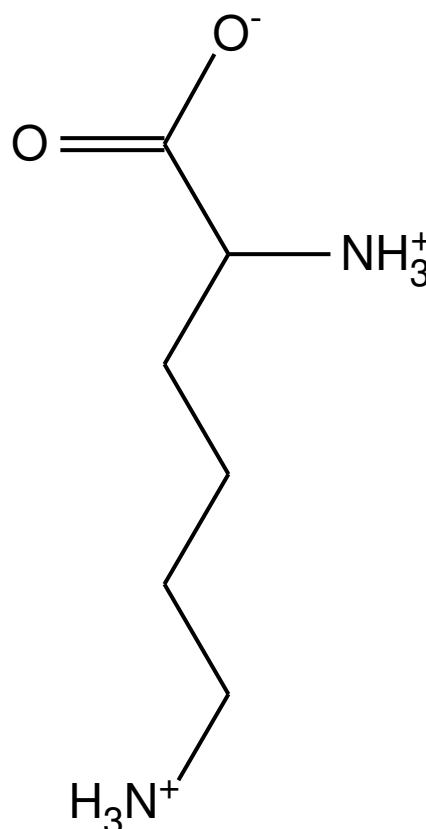
Glutamate
Glu
E



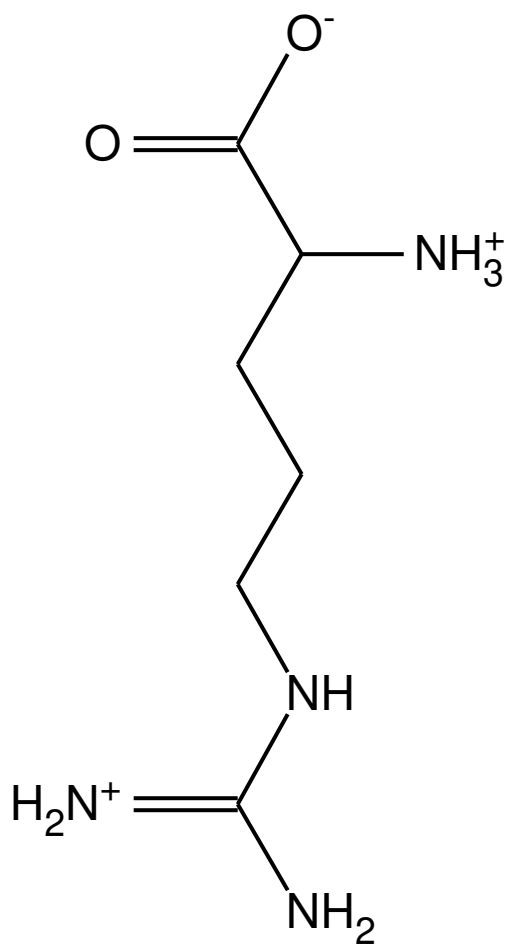
Asparagine
Asn
N



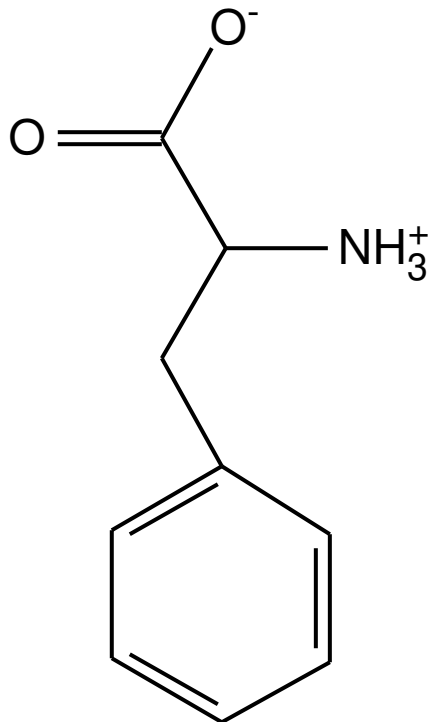
Glutamine
Gln
Q



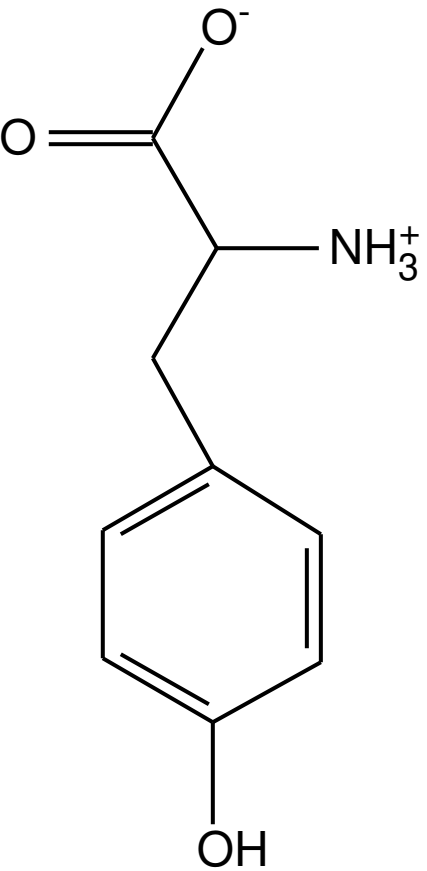
Lysine
Lys
K



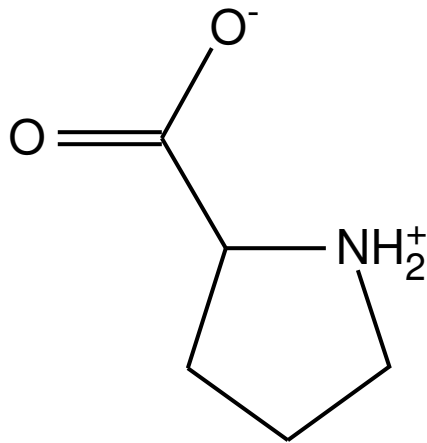
Arginine
Arg
R



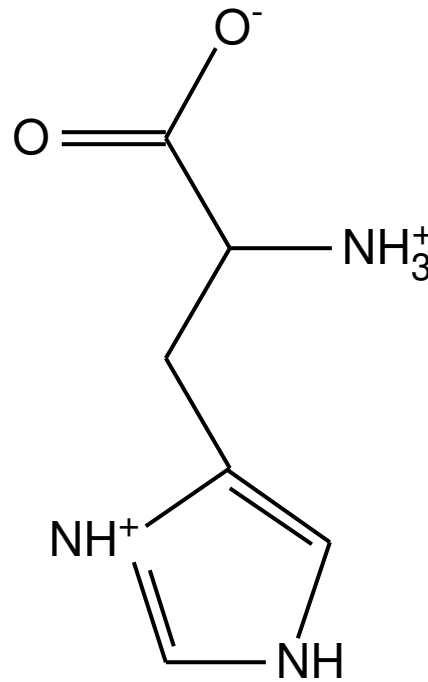
Phenylalanine
Phe
F



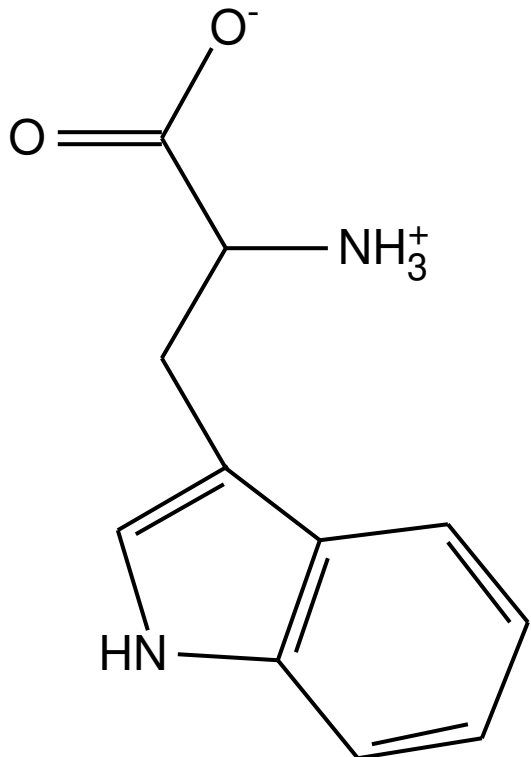
Tyrosine
Tyr
Y



Proline
Pro
P



Histidine
His
H



Tryptophan
Trp
W