

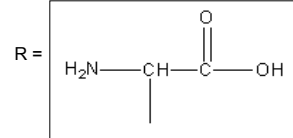
The 20 Amino Acids

Mnemonics

GAVLI
FYWPH
MSTAG
CNQLR

Notes:

- 1) In each of the structures below the R group stands for the repeating peptide subunit.
- 2) Underlining indicates the 3 letter abbreviation.
- 3) Capitalization indicates the 1 letter abbreviation.
- 4) Carboxyl groups COOH tend to dissociate into COO⁻ and H⁺ and physiologic pH.
- 5) NH₂ groups tend to become NH₃⁺ depending on pH.



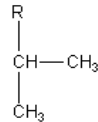
Glycine - G



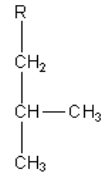
Alanine - A



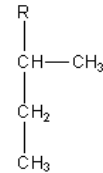
Valine - V



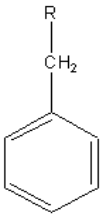
Leucine - L



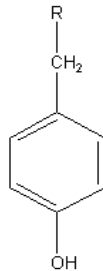
Isoleucine - I



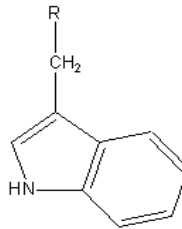
phenylalanine - F



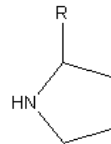
tyrosine - Y



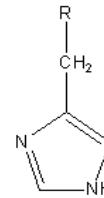
tryptophan - W



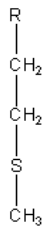
Proline - P



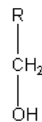
Histidine - H



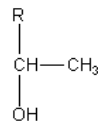
Methionine - M



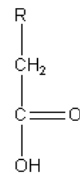
Serine - S



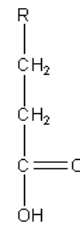
Threonine - T



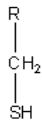
Aspartic acid - D



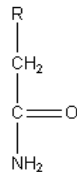
Glutamic acid - E



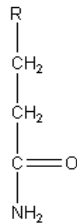
Cysteine - C



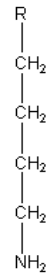
asparagiNe - N



glutamine - Q



Lysine - K



aRginine - R

