



Definition

Amino acids are the structural units (building block) of proteins.

They are obtained from protein by acid, alkali or enzymatic hydrolysis.

✓ There are 20 known amino acids (21 after adding selenocysteine aa)

General structure of amino acids

COOH group

NH₂ group

R - which is characteristic for each amino acids

Amino acids

Classification

Chemical classification

Neutral AA

NH₂ = COOH (Neutral)

$\text{CH}_2 - \text{CH} - \text{COOH}$

Glycine, alanine, valine, leucine, isoleucine, Cysteine, cystine, methionine, phenylalanine, tyrosine, tryptophan

Neutral

Acidic AA

COOH > NH₂ (carry -ve charge)

$\text{HOOC} - \text{CH}_2 - \text{CH} - \text{COOH}$

Aspartic acid, Glutamic Acids

Acidic

Basic AA

NH₂ > COOH (carry +ve charge)

$\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2 - \text{CH} - \text{COOH}$

Arginine, Histidine, Lysine

Basic

Nutritional classification of AA

Essential

Non-essential

Metabolic classification of AA

Glucogenic

Ketogenic

Mixed glucogenic & Ketogenic