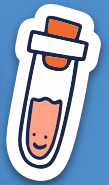
Amino acid

Gaith Altayar 3484
Lobna khailed 3507

Aisha eldressi 3219
Ahmed azmi 3723

By the end of this presentation you will be able to :



01 Define amino acid

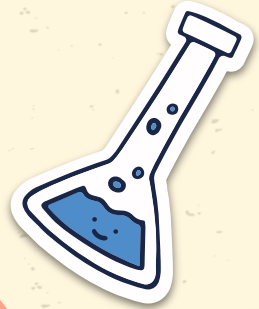
02 Describe structure of amino acid

03 List types of amino acid

04 List physical and chemical properties of amino acid

05 Discuss absorption and metabolism of amino acid

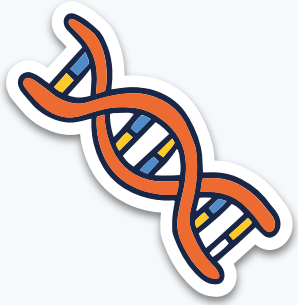
06 List importance of amino acid



01

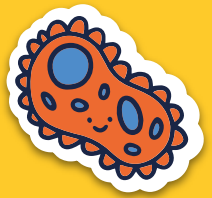
Amino acid

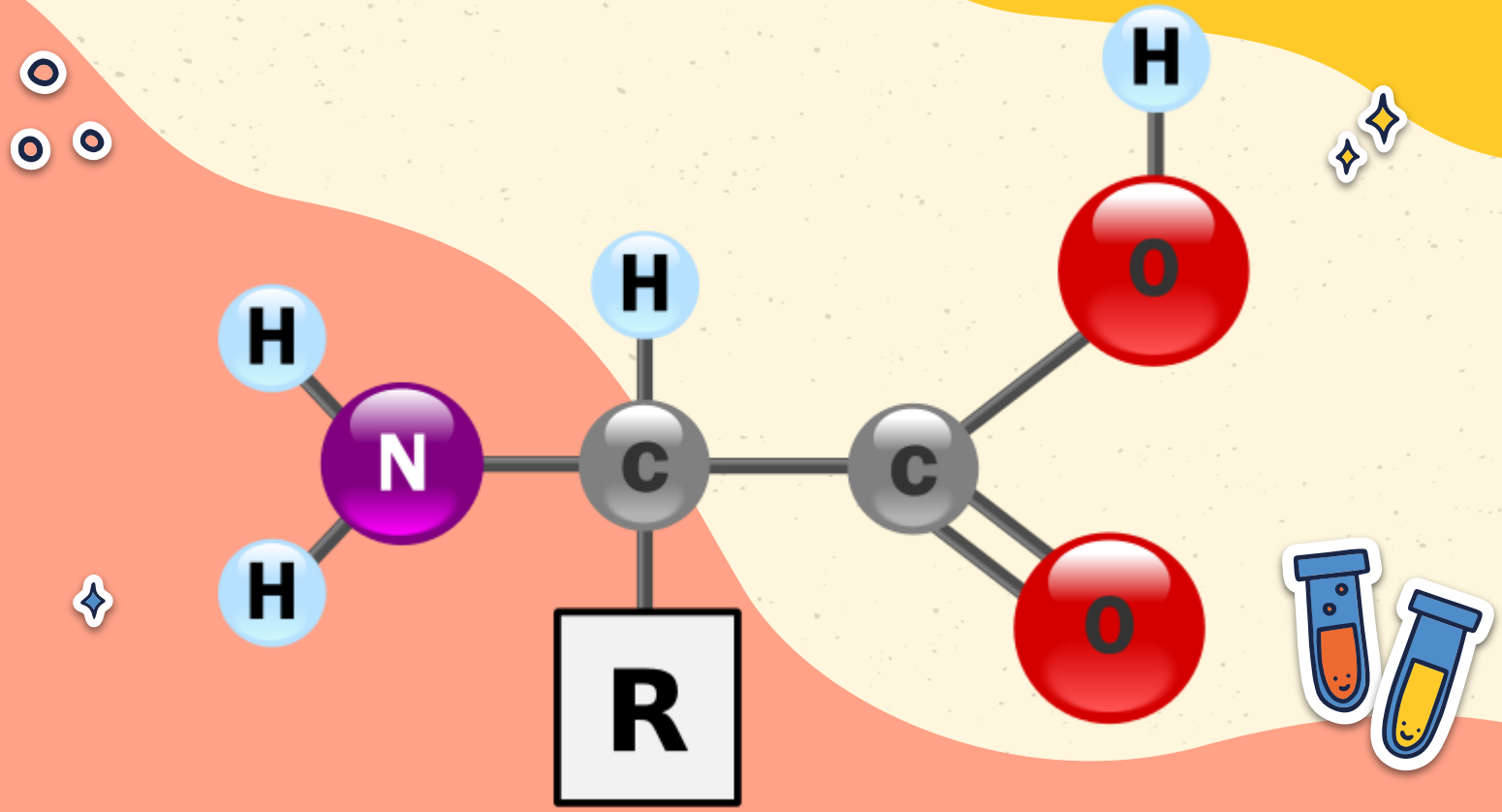
“Amino acids are the main building blocks for protein and peptide construction. Amino acids are a group of organic compounds consisting of at least one amine group crossed with a carboxyl group.



02

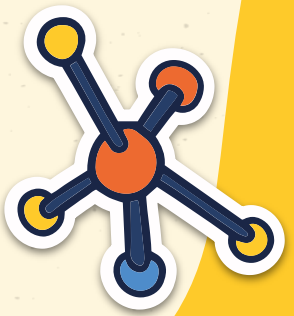
Describe structure of amino acid



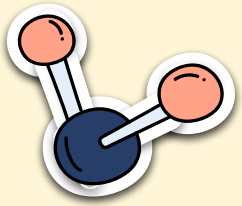

H
H
H
N
C
C
O
O
R

03

List physical properties and chemical of amino acid

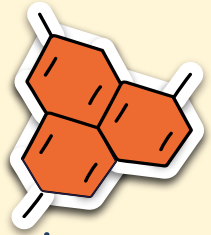


List physical and chemical properties of amino acid



Physical properties

Colorless, and crystalline structure soluble in water and insoluble in organic solvents melting point higher temperature of ten above 2000C Absorbed in ultraviolet between 230-280 nm

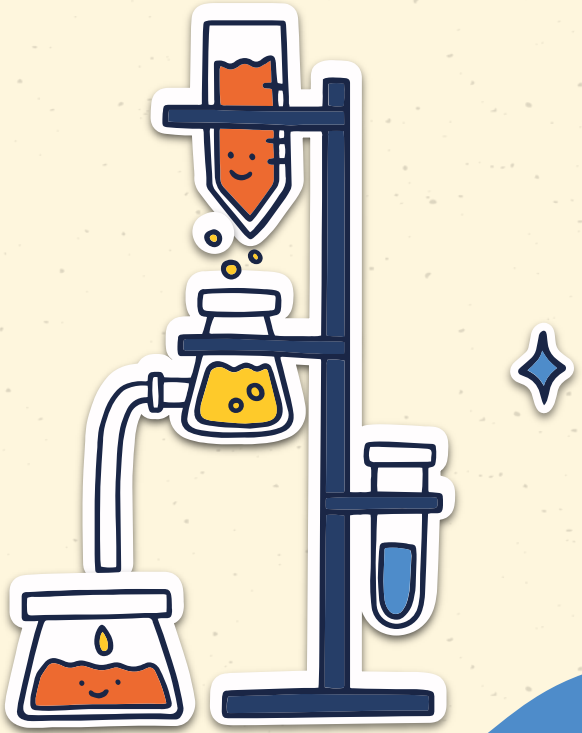


Chemical properties

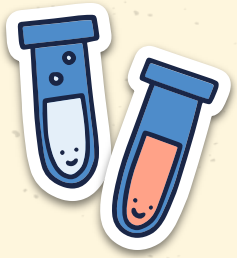
Reaction with Mineral acids (Salt formation) , Acylation , Methylation or benzoylation ,Reaction with Nitrous acid , ninhydrin reaction

03

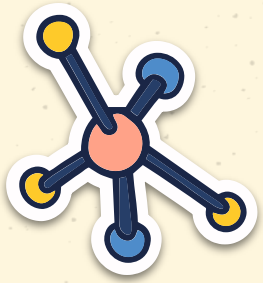
List types of amino acid



Types of amino acid



Non-essential amino acids



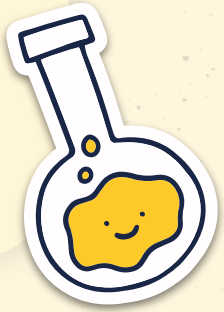
Essential amino acids

Semi Essential (Conditionally) amino acids

Essential amino acids

Food is the main source of essential amino acids, which is why they are called essential, as the human body does not have the ability to manufacture them. You can organize your ideas clearly

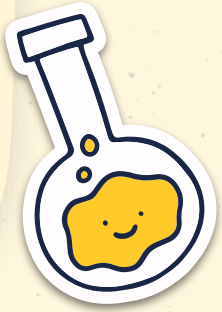
- Tryptophan.
- Histidine.
- Isoleucine.
- Methionine (Methionine).
- Threonine.



Non-essential amino acids

are amino acids that are made within the body, and are called non-essential; Because the human body is able to manufacture them

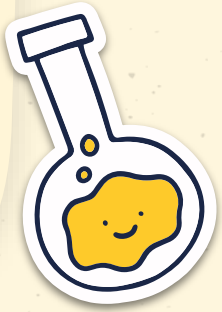
- Arginine.
- Alanine.
- Cysteine.
- Asparagine.
- Aspartic acid



Semi-Essential (Conditionally) amino acids

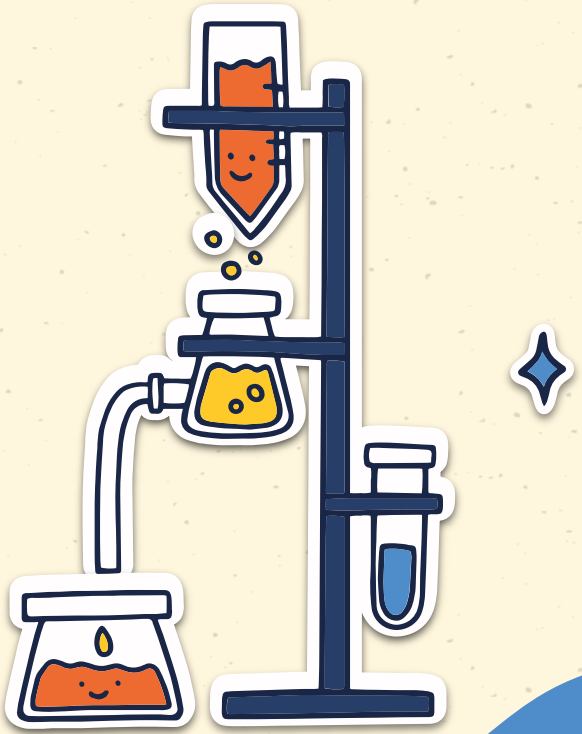
In the normal case, the conditionally essential amino acids are among the types of non-essential amino acids, that is, the human body can manufacture them, but if the body is exposed to stress or disease, the body becomes unable to produce them

- Arginine.
- Histidine

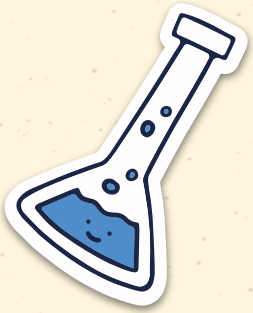


04

Discuss absorption and metabolism of amino acid



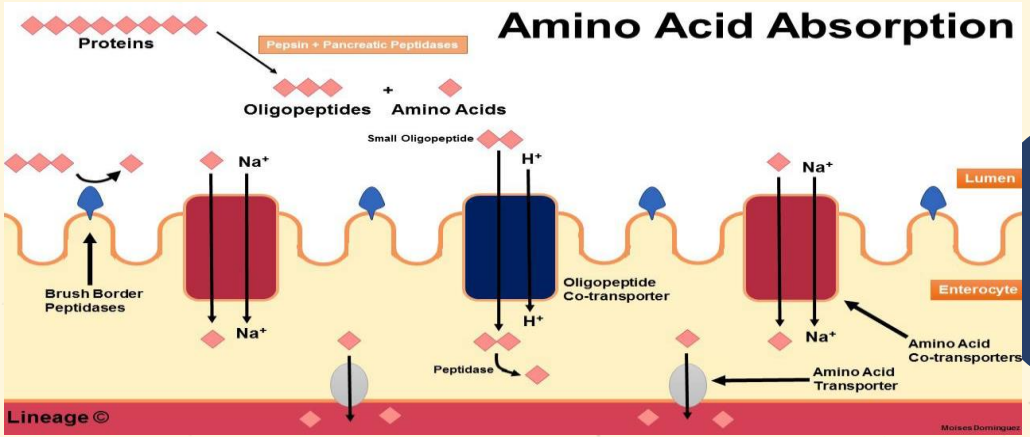
absorption



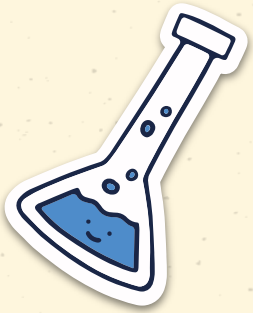
“Amino acids are absorbed by a co-transport mechanism with sodium ions. Both sodium ion and amino acid combine with a cell surface protein receptor .

absorption

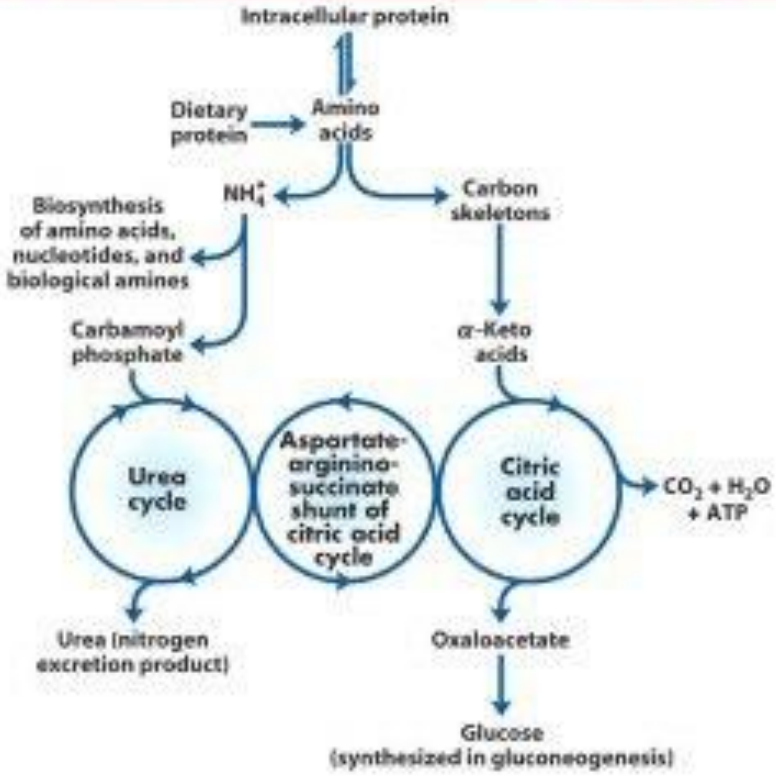
There may be a small amount of absorption of amino acids as di- and tripeptides. These are probably digested within the cell to amino acids Most absorption of amino acids occurs in the jejunum



Metabolism

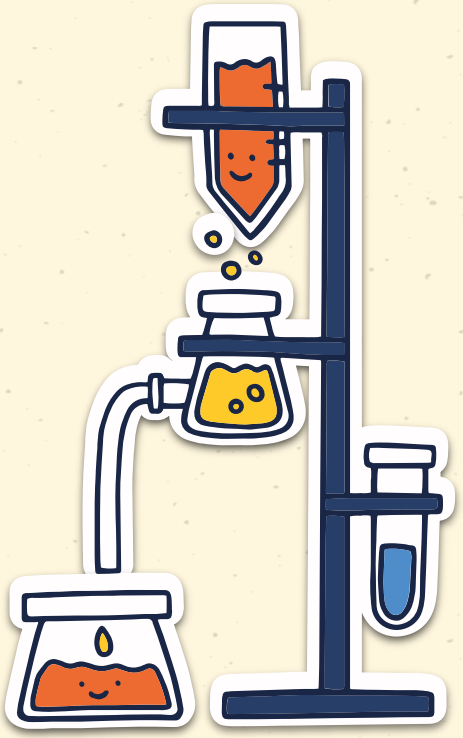


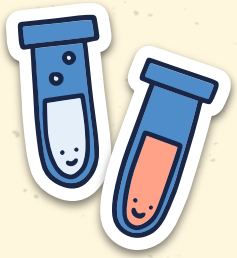
Amino Acid Metabolism



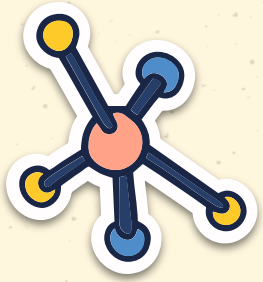
05

List importance of amino acid





They are important in many biological molecules



Amino Acids are the building blocks of proteins

They are critical to life, and have many functions in metabolism

In the body

01

Assisting in the creation and growth of muscles, connective tissue, and skin

02

Assisting in maintaining muscle tone and tissue strength

03

Healing and repair

04

Normal digestion

In the body

05

Providing energy for your body

06

Regulating moods by helping

07

Producing neurotransmitters

08

Maintaining healthy skin, hair, and nails

Summary

1- Amino acids are the main building blocks for protein
2- Amino acids contain an amine group, a carboxylic acid group, and a side chain (R) that varies between different amino acid
3- Physical properties include color, density, hardness, and melting and boiling points.
4- essential amino acids Non essential amino acid Semi essential amino acid
5- metabolism have a two states fed state and fasting state
7- amino acids used in boxing Since amino acids help
build protein chains and play a supporting role in
almost every part of your body,

Reference

1-^ Nelson DL, Cox MM (2005). Principles of Biochemistry (4th ed.). New York: W. H. Freeman. ISBN (https://en.m.wikipedia.org/wiki/ISBN_(identifier)) 0-7167-4339-6 (https://en.m.wikipedia.org/wiki/Special:BookSources/0-7167-4339-6).

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3 - hhttps://www.google.com/search?q=amino+acid+metabolism+&tbm=isch&- d=2ahUKEwi9qOav98_4AhUN_hoKHZD_DKcQ2-cCegQIABAC&oq=amino+acid+metabolism+&gs_lcp=ChJtb2JpbGUtZ3dzLXdpei1pbWcQAzIFCAAQgAQyBQgAEIAEMgUIABCABDIFCAAQgAQyBQgAEIAEOgQIABBDOgYIABAeEAc6BggAEB4QCDoCCClQ1xpYiKUBYLyuAWgBcAB4AYAB3gmIAawpkgEKMC4xNC42LTIuMZgBAKABAcABAQ&sclient=mobile-gws-wiz-img&ei=L9e6Yv3UIo38a5D_s7gK&bih=715&biw=414&client=safari&prmd=ivnmsb#imgrc=pC3AhsxcQJLpZMttps://driphydration.com/blog/amino-acid-chart/#conditional

4- https://www.slideshare.net/MAHEDI16/amino-acid-67871114

5- https://driphydration.com/blog/what-are-amino-acids-and-why-do-you-need-them (https://driphydration.com/blog/what-are-amino-acids-and-why-do-you-need-them/)/

Thank for listening