Introduction to Biochemistry

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What is Biochemistry?

Study of chemical processes in living organisms and non living matter also.

Biochemistry govern living organisms and living processes by controling **metabolism**, **energy**, **cell signaling** (hormones), reaction in our cells need **enzyme**. Enzymes accelerate the rate of reactions.

Enzymes are protiens.

What are the basics of Biochemistry?

Biochemistry mainly deals with structure, functions and reactions of biological macro molecules, such as proteins, carbs, lipids, and necleic acid that provide the structure of the cells and perform many of function that associates with life.

The chemistry of cells depend also **on the reaction of smaller molecules** and **ions**. It can be inorganic for ex. Water and ions, or it can be organic for ex. Amino acids which is used in synthesis of proteins

What is the importance of Biochemistry?

Metabolism, is the mechanisms by which the cells harness energy known as metabolism.

The findings of biochemistry applied primarily in Medicine, Nutrition, agricultural, industry and etc…

In medicine: to investigate the causes and cures of the diseases

In nutrition: to study how maintain health and study the effect of nutritional deficiencies.

In Agricultural: to investigate soil and fertilizers.

In industry: for biological product like adding sweeteners', salt, lipid, fortifying vitamins, etc…

In pharmacology: to investigate the effect of drugs on the receptors of cells

It used in clinical diagnosis, manufacture of various biological products, treatment of the disease.

How is Biochemistry used in everyday life?

For ex: in gene therapy to treat certain medical condition.

How is biochemistry related to you?

In hospital to perform chemical tests such as kidney function test, liver function test, hormones, vitamins, cancerous Biomarkers, etc..

- To investigate the source of sickness and collapse.
- To find out the mechanism behind diseases.
- To find treatment (pharmacology) acting on receptors.

C. Stan Tsai - An introduction to computational biochemistry-J. Wiley (2002).