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Basic of protein classification

What is protein?

Proteins is a class of nitrogenous organic compounds which have large molecules composed of one or more long chains of different α -L amino acids and are an essential part of all living organisms, especially as structural components of body tissues such as muscle, hair, etc., and as enzymes and antibodies

Basis of proteins classification

- Source,
- chemical composition,
- structure,
- functions, and
- solubility in different solvents

Proteins on the basis of source Proteins may be categorised

- 1.) Plants protein
- 2.) Animal protein

Protein classification based on chemical composition

On the basis of their chemical composition, proteins may be divided into two classes:

1. Simple protein
2. Complex protein

Simple proteins

- Also known as homoproteins, they are made up of only amino acids. Examples are plasma albumin, collagen, and keratin.

Conjugated proteins

Sometimes also called heteroproteins, they contain in their structure a **non-protein portion**. Three examples are glycoproteins, chromoproteins, and phosphoproteins.

- **Glycoproteins**

They are protein that covalently binds one or more carbohydrate units to the polypeptide backbone.

▪**Chromoproteins**

They are proteins that contain colored prosthetic groups. Typical examples are: hemoglobin and myoglobin, which bind, respectively, one and four heme groups; chlorophylls, which bind a porphyrin ring with a magnesium atom at its centre; rhodopsins, which bind retinal.

▪**Phosphoproteins**

They are proteins that bind phosphoric acid to serine and threonine residues. Generally, they have a structural function, such as tooth dentin, or reserve function, such as milk caseins (alpha, beta, gamma and delta), and egg yolk phosvitin.