



THERMO PHYSICAL DEALINGS OF CERTAIN BIOMOLECULES

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ABSTRACT

Biomolecules are more commonly ions that are present in organisms. All living things need energy and nutrients and their energy comes from food. Biomolecules .All living things are made up of one or more cells and the human body is made up of billions of cells. Groups of cells are called tissues and tissues are made up of organs and organs perform specific functions in the body. Specific work performed due to the availability of a specific substrate. Proper presence helps to regulate the function of organs or body substrates or molecules. Protoplasm or protoplasmic organelles and other cell structures (e.g. cell wall plants) found in the molecular structure of various chemicals are usually called biomolecules or biological activity. Simple organic compounds from which living organisms are made are unique to life and are found as a product of organisms and biological activity.

INTRODUCTION:

There are two types of biomolecules.

1. Small molecules or micro molecules include minerals, water, carbohydrates, amino acids, lipids, etc. Such as low molecular weight, simple molecular structure and high solubility.

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2. Large molecules such as proteins, nucleic acids, polysaccharides, etc. are formed by the polymerization of many micro-molecules of the same type.

The structure and function of cell organelles are determined by the arrangement of molecular structures and the properties of their biomolecules. Biomolecules come in two forms according to their natural product. Bio molecules are naturally formed in the body called endogenous bio Molecules and bio-molecules that do not form naturally in the body are called exogenous. Most biomolecules are organic compounds and the four elements oxygen carbon, hydrogen and nitrogen make up 96% of the mass in the human body. Biomolecules are classified according to their cyanotic properties.

Some of the health benefits of glycine: Bio molecules

- Helping to build muscle mass in animals.
- Preventing scorpion (Muscle loss, muscle wasting or breakdown) to play a role in the production of human growth hormone
- Improving mental functioning and memory
- Helping to prevent stroke and seizures
- Protecting the skin from the symptoms of aging or cellular mutations
- Protecting collagen in the joints and reducing joint pain.
- Improving flexibility and range of motion
- Product to reduce inflammation by increasing glutathione and reduce free radical damage
- Reducing the risk of certain types of cancer
- Forming the lining of the gastrointestinal tract
- Production of bile salts and digestive enzymes
- Helping to reduce allergic and autoimmune reactions
- Increasing energy levels and fighting fatigue.
- Red blood cells help fight stress and anxiety effects.
- Helping control the symptoms of seizures, schizophrenia and mental disorders

Looking at the wide band applications of biomolecules in almost all areas; Physical properties dielectric spectroscopy as different concentrations in terms of temperature and efficiency, salvation dynamics and thermodynamic properties give new insights about the



dynamics of biomolecules. Amino seed-like biomolecules containing glycine which is the simplest of amino seeds, the biosynthesis of a protein consists of an amino group, a carboxylic seed group, and a side-chain methyl group that is non-polar, elliptic. It is necessary to take a dielectric break to get important information about it. The physics of the biomolecules in the solution are in the hydration shell and a large number of biomolecules and water molecules are related to each other, each of which affects the structure and motility of the other. It is important to study the hydration of bio molecules Understand the hydrophobic effect as well as the hydration of proteins.

In life, Proteins with biological functions are generally soluble and many of them are functional and non-solvent strongly affects physical properties. After glycine Structural alanine is a polar biomolecule with methyl side chain which provides useful information for the biological system about its interaction with water. The physical properties of biomolecules are complex and difficult to match Interaction with water will be useful for understanding structural changes in order to study soluble and insoluble structural information, along with its biological properties. The speed of relaxation and interaction with different materials provide useful information about its dielectric behavior. Studying the molecular dynamics of bio-molecules is an important application.

Dielectric spectroscopy provides information related to the structural and dynamic properties of dielectric absorption and dispersion, dielectric strength, dielectric rest time, bipolar moment, molecule and thermo dynamics, Criteria such as enthalpy of stimulus, entropy of stimulus, and chichi free energy. Activation of biomolecules, the study of dielectric dispersion and absorption provides a highly sensitive tool for detecting biomolecules in their pure liquid state. Molecular molecules have been shown to interfere with molecules When circulating at low temperatures, the remaining distance is greater than at higher temperatures, the interaction of biomolecules with water at different concentrations and temperatures gives valuable information about its dielectric behavior.

It shows the overall picture of the properties of the parameters, Investigated biomolecules as well as biopolymers that could help us find them, Information about intra and intermolecular interactions, macrostructure, investigated the structural and dynamic behavior of biological molecules and biopolymers as a function of temperature and the effect of structural changes on the presence of water in the stream. The usefulness of dielectric theory to describe the results obtained by biomolecules in their pure liquid state for the formation of clusters, hydrogen bonding, hydration, resting phenomena, molecular coiling and thermodynamic parameters such as enthalpy, entropy and free energy at temperature. Dielectric rest the phenomenon assumes that the jelly biomolecule was examined and that the function of the biopolymer temperature and the presence of water in the line change as a result of the properties of the system.



Aims and objectives of this study:

- Complex permission, to study dielectric behavior such as static dielectric

Stable, rest time and dielectric rest strength i) Biomolecule

- Linen and glycine in different beard concentrations and i) biopolymers

The importance of study:

Structural and despite a lot of effort Over the years the dynamic properties of biomolecules still have many interesting aspects of molecular interaction and spectroscopic behavior, which we do not fully understand. Molecular biological processes usually show high levels of specific thermo-physical and physiochemical characteristics and efficiencies are not known. Understandably, these specific characteristics can be attributed to proper evolution Control and regulation mechanisms that include certain bio-molecules and biopolymers play an important role. Such macromolecular compounds usually cause defined changes which is most important for their biological function so the nature of the respective structures and the description of their function will be the largest.

REFERENCES

- 1) Yojana J.P.Carreón,HildaMercado-Urbe(2016),Dielectric spectroscopy of biomolecules at low frequencies: Evidence of proton wires, Journal of Molecular Liquids, Volume 223, November 2016, Pages 136-140.
- 2) N. Q. Vinh, S. James Allen, and Kevin W. Plaxco(2011) Dielectric Spectroscopy of Proteins as a Quantitative Experimental Test of Computational Models of Their Low-Frequency Harmonic Motions, J. Am. Chem. Soc., 2011, 133 (23), pp 8942–8947.
- 3) G. Oster, J.G. Kirkwood(1943), J.chem.phys 11 175-178.
- 4) S. Havriliak, S. Negami, (1966) J.Polym. Sci.Polym.Symp. j.6 99-117.