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Place and Importance of Biochemistry in Living Beings' Health Care and Some New Perspectives

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What is Biochemistry?

We know for a long time that, biochemistry deals with the living beings' in a wide range of species, from prokaryotes to eukaryotes. As said Berg and co-authors in their book, "Are we ready now our journey into biochemistry that begin more than 3 billion years ago?" [1]. So, what is that biochemistry?" Biochemistry is a wonderful and charming body of knowledge (or knowledge of body), and is greatly influencing all living fields [1]. According to Biochemical Society, "Biochemistry explores the chemical processes within and related to living organisms. "The Chemistry of Life" concentrates on handles with happening at a molecular level that, what's happening inside the living cells and organelles, studying components like proteins, enzymes, lipids, carbohydrates, DNA, and RNA". Biochemistry contains in a very broad range of scientific disciplines, including molecular biology, genetics, physiology, microbiology-virology, forensics, animal and plant sciences and medicine [2,4]. Some chemical, physical and physico-chemical rules play important roles in biology of living systems which make regulation from complexicity. If we want to make "chemistry of LIFE" understandable, we first need to have knowledgement about atoms, elements, bonds, and functional groups of organic chemistry, the physical chemistry of kinetics, kinetics of enzyme, and equilibria and homeostatic balance [3].

Magic of life is meaningful with miracles that only can be explained with biochemistry. And the vital mechanisms we still cannot explain, which are still keeping their mystery, are waiting to be understood. For that reason, it is not at all surprising to see biochemists in the list of Nobel Prize winners, for the last 50-60 years.

What are the Aims of Biochemistry?

The science of life's chemistry has great influence and will go on to have extensive effects on many aspects of human and all other living organisms, mainly human and animal medicine and other life science fields [1,4]. Biochemistry makes possible the rational design of new drugs, including specific inhibitors of enzymes required for the replication of viruses for the treatment of many life-threatening deadly illnesses [1]. Biochemistry that a logical answer to all the mysteries of life, responses to such questions that once seemed faraway and are likely to be more thoroughly bring to light in the near future [1,4]. Biochemistry do substantial in both animal and human medicine, because of the important for physiology (helps to comprehend the biochemical changes related to physiological alteration), for pathology (based on the symptoms described by the patient), for nutrition deficiency (The functions of the vitamins and the minerals *in vivo*), and for hormonal deficiency (The role of hormones, peptides and neuropeptides in the organisms' systems is understandable by biochemical mechanisms) [4]. This science that works for every fields of life, is used in agriculture (farming, fishery, poultry, sericulture, beekeeping, food chemistry, etc.), in pharmacy (enzyme-inhibitor mechanism, synthetic hormones and derivatives, etc. for drug design & synthesis), in plant and animal sciences, as a huge research area [1,4,5].

Animal Clinical Biochemistry

Kaneko strongly notes that, "The clinical biochemistry has evolved into a key diagnostic focus in human and veterinary medicine, animal science, nutrition, public health and food safety, environmental health and safety, pharmaceutical development and safety, health surveys from prenatal to birth to death, and even to our psychological health" [6,7]. The "animal biochemistry" must be support with knowledges in more of the basic disciplines of bio-chemistry, biology-zoology, physiology, molecular biology, pathology, immunology, nutrition or their subdisciplines. For the health care of the human and animal in it's context, animal clinical biochemist must be the pioneer of all aspects of biology in order to continue to make meaningful contributions to the field [5-7]. The biochemistry and genetic will be the rescuer for the livestock sector, which is in immediate danger of hunger and drought! How Does? Simple! Challenges and problems with meat yield, milk yield, growth performance, breeding quality and proportion in a wide variety of animal species are problems that can be solved by genetic intervention in the light of biochemical mechanisms. This solution will just be provided by the protection of the genetics of the appropriate domestic breeds. The biochemists, physiologists and geneticists know that, the diversity of the domestic animal gene pool is the predominant breeds of livestock represent not only the relatively few highly utilized domestic animals to increase domestic animal productivity, but also their underused relatives [5].

In short, the science of life's chemistry is actually the living side of science. The secrets of living things, the health conditions, and the remedies for their illnesses, which have been able to survive for centuries in the world, are hidden in biochemical mechanisms. And still they hide myriad pieces of information waiting to be discovered.

References

1. Berg JM, Tymoczko JL, Stryer L (2002) Biochemistry. Biochemistry and Human Biology. (5th edn), W H Freeman, New York pp: 1-4.
2. http://www.biochemistry.org/?TabId=456
3. https://blogs.qub.ac.uk/qubio/2015/09/23/
4. Nelson DL, Cox MM (2012) Lehninger Principles of Biochemistry. (6th edn), WH. Freeman & Co Ltd (9781429234146).
5. Opportunities in Biology Committee on Research Opportunities in Biology, National Research Council (1989) Chapter:10: Advances in Medicine, the Biochemical Process Industry, and Animal Agriculture" ISBN:0-309-55775-5.

6. Kaneko JJ (1996) A Look to the Future of Animal Clinical Biochemistry: Implications for Diagnostics and Research. Comp Haematol Int 6: 221-224.

7. Kaneko JJ (2000) A century of animal clinical biochemistry: Growth, maturity and visions for the future. Revue Méd Vét 151: 601-605.