



**PROTEIN VALUE OF FRESH WATER FISH *CHANNA PUNCTATUS* AFTER
ANTIBIOTIC DOSE, FROM RIVER GODAVARI, DIST. NANDED.**

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ABSTRACT

Today the medicine branch is the main support for cure all those diseases may caused due to toxic impacts, bacterial infections, viral infections to human being. The medical experts recommends various types of ‘‘ Antibiotics’’ as a life line for chronic & acute diseases. All these antibiotics are not an exact sort of treatment because it might show many side effects on human as well as various animal bodies. Proteins are important organic substances required by an organism in tissues building and repair. Under extreme stress conditions, proteins have been known to act as the energy supplier in metabolic pathways and biochemical reactions. To overcome such type of problems, the present investigation is based on the impact of antibiotics on protein content of fresh water fish – *Channa punctatus* from River Godavari, Dist. Nanded.

KEYWORDS: *Channa punctatus*, bacterial infections, viral infections.

1. INTRODUCTION

Proteins are most abundant intracellular macromolecules and constitute over half the dry weight of most organisms. They occupy a central position in the architecture and functioning of living matter. They are intimately connected with all phases of chemical and Physical activity that constitutes the life of the cell. Therefore they are, essential to cell structure and cell function. The interplay between enzymatic and non-enzymatic proteins governs the metabolic harmony (Lehinger, 1984). They are also involved in major physiological events to maintain the homeostasis of the cell. Therefore, the assessment of the protein content can be considered as a diagnostic tool to determine the physiological process of the cell (Kapil and Ragothaman, 1999; Munshigeri, 2003). Proteins are essential nutrients for the human body. They are one of the building blocks of body tissue, and can also serve as a fuel source. As a fuel, proteins contain 4 kcal per gram, just like carbohydrates and unlike lipids, which contain 9 kcal per gram.

Proteins are polymer chains made of amino acids linked together by peptide bonds. During human digestion, proteins are broken down in the stomach to smaller polypeptide chains via hydrochloric acid and protease actions. This is crucial for the synthesis of the essential amino acids that cannot be biosynthesized by the body (Genton *et.al*, 2010).

2. MATERIAL AND METHOD

In the present work, freshwater fish *Channa punctatus* is collected from Godavari river Nanded and brought to laboratory for experimentation purpose. Immediately after bringing to laboratory, fishes were washed with fresh and clean water to remove algal biomass, mud and other waste material. The cleaned animals were then kept for depuration for 12 hrs in laboratory conditions under constant aeration. For protein analysis, fish were dissected and soft body tissues like Muscle, Liver, Kidney and Brain, were removed. 100 mg of each wet tissues were taken for biochemical analysis. Protein was determined by the method proposed by Lowry *et al.*, (1951), using Bovine Serum Albumin (BSA) as standard and values of proteins were expressed in terms of mg protein/gm wet weight of tissue.

3. RESULTS AND DISCUSSION

The results of present work found to be highly sensitive. The fresh water fish *Channa punctatus* showed variations in total protein content when treated with Ofloxacin up to 144 hrs. In the present investigation it was showed that gradual fluctuating trend in total protein upto 144 hr. as compared to control. The result were tabulated in Table and Fig: 1.

The results calculated indicate that the total protein content of *Channa punctatus* decreased gradually then slight fluctuating trends when treated with increasing conc. i.e. 500, 1000, 1500, 2000, 2500, 3000 mg.

Protein content after Ofloxacin Dose

Protein content in Muscle after Ofloxacin dose showed are as (138.43 \pm 4.39 at control level and then 132.27 \pm 3.33 at 500 mg, to 121.16 \pm 2.12 at 144 mg at treated level.

Protein content in Liver after Ofloxacin dose showed are as (131.40 \pm 4.59 at control and then 129.20 \pm 4.26 at 500 mg on 24 Hr, to 117.15 \pm 1.11 at 144 mg on 144 hrs at treated level.

Protein content in Kidney after Ofloxacin dose showed are as (115.48 \pm 3.32 at control and then 115.28 \pm 3.09 at 500 mg on 24 hrs, to 111.20 \pm 1.13 at 144 mg on 144 hrs at treated level.

Protein content in Brain after Ofloxacin dose showed are as (117.41 \pm 3.20 at control and then 113.47 \pm 2.28 at 500 mg on 24 hrs, to 106.10 \pm 1.14 at 144 mg on 144 hrs at treated level.

Table 1: Protein content of *Channa punctatus* Exposed to Ofloxacin in mg protein/gm wet weight of tissue.

Sr.no.	Exposure time in Hr.	Conc.in mg	Muscle	Liver	Kidney	Brain
1	Normal (00 hrs)	00	138.43 \pm 4.39	131.40 \pm 4.59	115.48 \pm 3.32	117.41 \pm 3.20
2	24 hrs	500	132.27 \pm 3.33	129.20 \pm 4.26	115.28 \pm 3.09	113.47 \pm 2.28
3	48 hrs	1000	128.39 \pm 2.14	128.21 \pm 3.10	116.18 \pm 2.20	110.20 \pm 2.30
4	72 hrs	1500	125.20 \pm 3.44	124.30 \pm 2.18	111.20 \pm 2.38	116.11 \pm 1.39
5	96 hrs	2000	133.51 \pm 4.31	129.62 \pm 2.15	121.36 \pm 2.19	115.17 \pm 1.27
6	120 hrs	2500	124.19 \pm 2.23	122.17 \pm 2.45	115.33 \pm 2.21	112.14 \pm 1.36
7	144 hrs	3000	121.16 \pm 2.12	117.15 \pm 1.11	111.20 \pm 1.13	106.10 \pm 1.14

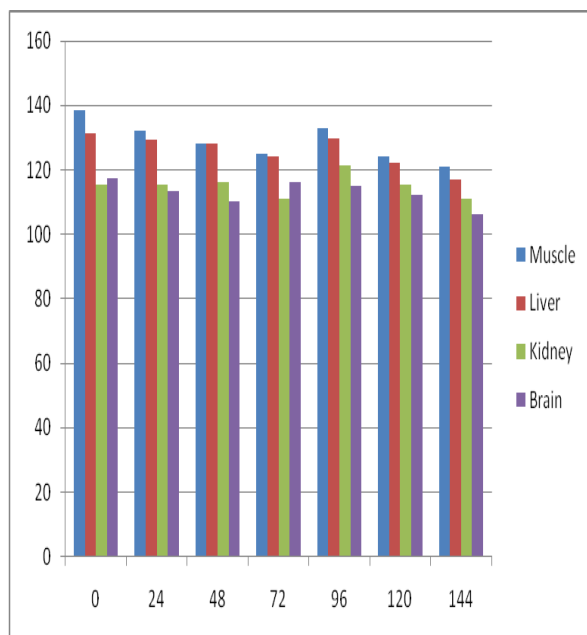


Figure 1: Protein content of *Channa punctatus* Exposed to Ofloxacin in mg protein/gm wet weight of tissue

The present study revealed that, there is significant variation in the biochemical composition in different body tissues. Organic constituents like protein act as key substances for different metabolic activities. Protein is the main organic nutrient used to build up different body tissues. All the tissues show increasing order protein contents in rainy season, which is correlated with highest body activities of animal during this season. And due to increase inflow and turbidity of water and to cope up with new environmental change. It might be due to favourable environmental lots of food availability and the period of growth with the gonadal development.

The protein seems to be its only alternative resource of energy under conditions of food scarcity. During May 1st and 2nd fortnight the drastic environmental condition results in recovery of tissues. Under antibiotic dose all the tissues show significant variations gradual decline of protein content upto 72 hrs and slight increase at 96hrs and further decline.

The aquatic environment is continuously being contaminated with chemicals from agriculture and urban activities. Fish constitute a valuable dietary item for human consumption and aquatic pollution affects health and survival status of the organism. In many aquatic systems, metal concentrations are elevated over natural background levels due to a continuous release of metals from industrial and agricultural sources (Kumar and Singh, 2010). The traditional people are depends on natural resources from time immemorial for their health care needs. This knowledge usually transmitted orally from generation to generation without any written document. Therefore research based on such information could lead the discovery of new treatment strategy or drug molecules. Synthetic drugs and food preservatives are notably affected the ecosystem to a considerable extent, due to their higher persistency and constant accumulation in the biological system (Kuppulakshmi *et al.*, 2008). (Tiwari *et al.*, 2008) found depletion of protein due to proteolysis after exposing *Oreochromis mossambicus* to nominal concentrations of phenol. (Bradbury *et al.*, 1987) Pointed out that the decreased protein content might also be attributed to the destruction or necrosis of the cells and consequent impairment in protein synthesis machinery.

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