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SDS-PAGE ELECTROPHORETIC SEPARATION OF PROTEINS IN C. CATLA MUSCLES

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ABSTRACT

Muscle tissues contribute 34–48 % of the total body mass in fish. Analysis of the Proteins in them enables better understanding of muscle physiology and metabolism. A proteome map reflects general fingerprinting of fish and has the potential to identify novel proteins which could serve as biomarkers for several aspects of aquaculture. Present investigation was undertaken to observe variability in the proteins and their importance as biomarkers in the fish Catla catla. SDS-PAGE Electrophoresis is a valid and widely acceptable tool used for the determination of molecular properties of proteins. Protein profile was thus generated during present study as a basic information for further research in molecular biology

KEYWORDS: *SDS Page, Protein, Nutrition, Catla Catla*

INTRODUCTION

Catla catla is a commercially important fish species which contributes major share in freshwater aquaculture. Analysis of fish proteins is applicable in identification and characterization of muscle proteins in fish, and it is normally done by SDS-PAGE, as indicated by earlier workers : Jasra *et al*., (2006); Etienne *et al*., (2000); Mitsuhashi *et al*.,(2002); Inger and Flemming (2003); Soliman *et al*., (2004); Islam (2006); Montowska and Pospiech (2007); Yilmaz *et al*., (2007); Singh *et al*., (2009); Osman *et al*.,(2009) and Chavda *et al*., (2010). Present research was undertaken to biochemically overview muscle proteins of fresh water fish *C. catla* using the techniques of, SDS-PAGE (Laemmli, 1970).

MATERIAL AND METHODS

Catla catla (Fig.1) is fast growing common fish contributing about 87 % of total freshwater production of high nutritive quality. Twenty five healthy fishes weighing about 1kg, with the length between 40-45 cm were procured from fresh water body of Nagpur, during regular netting. The collected fishes were brought into the laboratory and acclimatized in aquarium.

The fishes were anaesthetized with Phenyl Cellosolve (200 mg/l), and muscles were collected by dissecting them midway down the body, under the dorsal fin and above the lateral line. Individual muscle samples were collected. The samples were stored at - 4^0 C.

SDS PAGE (Plate) Electrophoresis

For SDS – PAGE Electrophoresis, muscle protein extracts were prepared from more than 25 individual samples following Laemmli (1970) method with minor modifications. In SDS – PAGE, proteins were separated on the basis of their molecular weight and net charges. The size of proteins was determined by comparing its electrophoresis mobility with that

of marker proteins on SDS gel of known molecular weights.

RESULTS AND DISCUSSIONS

In male fish muscle 14 bands were visible. A prominent band of 36kDa was noted. 55kDa, 42kDa and 29kDa were intensely stained thick bands. High molecular weight bands of 205kDa, 116kDa, 97kDa and 90kDa were thin, 24kDa and 22kDa were moderately stained thick bands. 84kDa, 62kDa, 21kDa and 15kDa were of low intensity (Fig.2).

In female fish muscle, 14 bands were visible. Prominent bands of 42kDa and 34kDa were noted. 62kDa and 55kDa were intensely stained thick bands. 205kDa, 116kDa, 97kDa, 92kDa, 84kDa and 29kDa were intensely stained thin bands.23kDa, 22kDa, 21kDa and 15kDa were bands of low intensity (Fig.3). The variations in protein band patterns may be due to change in the turn-over of various proteins. Similar changes in protein banding patterns were reported in the muscle of *Clarias batrachus* exposed to rogorin. (Helen *et al*., 2015).

Figure 1:

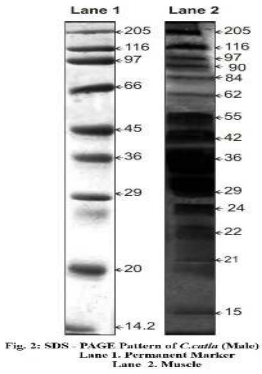

Fig. 2: SDS - PAGE Pattern of *C.catla* (Male)
Lane 1. Permanent Marker
Lane 2. Muscle

Figure 1:

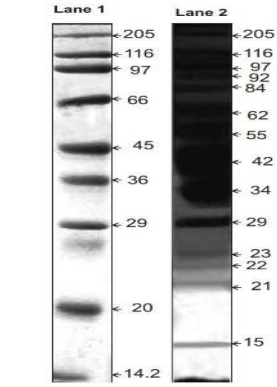

Figure 1:

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