

THE EXCITOTOXIC EFFECT OF MONOSODIUM GLUTAMATE ON ZEBRA FISH (*Danio rerio*)

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ABSTRACT

The sodium salt of glutamic acid is monosodium glutamate (MSG), also referred to as sodium glutamate is one of the most frequently used food additives in processed foods. In addition to its flavor-enhancing properties, MSG has been linked to several toxicities like Obesity, metabolic issues, Chinese Restaurant Syndrome, neurotoxicity and detrimental effects on the reproductive system. The current study is geared up to shed light on the effect of monosodium glutamate on *Danio rerio*, a fresh water fish. The objective is to study the lethal and sub-lethal concentration of MSG and its effects on morphology and biochemical parameters like total protein and carbohydrate in Zebra fish. The toxicity assay was conducted for 96hrs and the dose of 48.9 ppm was taken as LC_{50} . The tissues were taken from exposed and control fish, they are used for estimation of total carbohydrate and protein. The organisms showed statistically significant difference between exposed and control group. In this present study MSG has affected fish morphologically by discoloration, protrusion of eyes and the levels of proteins and carbohydrates decrease with increasing concentration of MSG, therefore it has effects on metabolism of the organism.

Keywords: Sub-lethal concentration, Toxicity assay, Morphology, Protein, Carbohydrate.



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Dear All,

Congratulations! The theme of the International Conference on 'Precision Nutrition and Health: Foresight Future of Disease Prediction and Prevention', will be an answer to the existing health issues globally. The precision is an individual targeted nutrition and overall helps in precision health, well-being of individual. Ultimately nutrition is closely related to health because as the saying goes, you are what you eat. The scientific content of the programme is very rich and definitely it will provide scientific feast to all the nutrition fraternity, who attends the conference.

The outcome of the conference will promote the precision nutrition, health and quality of life with individualized dietary plans.

The deliberations of the conference will focus on developing interventions to prevent or treat chronic diseases based on a person's unique characteristics like health, gender, lifestyles, genetic and dietary habits.

Precision Nutrition and Health, the need of the hour, is founded upon the concept of biological variability between individuals in response to nutrition.

Best wishes to all,

Yours Sincerely

Avula Laxmaiah
Secretary, NSI

Date: 16/12/2022

Place: Hyderabad

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