



Possible Mechanism of Aframomum Sceptrum Extracts Mediated Modulation of Renal Function after Monosodium Glutamate Exposure

Patrick Chukwuyenum Ichipi-Ifukor ^{(1)*} Ogebeke Geoffrey Ighowho ⁽²⁾ George Betty Omenebelle ⁽³⁾

⁽¹⁾ Department of Biochemistry, Delta State University, Abraka, Delta State, Nigeria.

⁽²⁾ Department of Biochemistry, Delta State University, Abraka, Delta State, Nigeria.

⁽³⁾ Department of Biochemistry, Delta State University, Abraka, Delta State, Nigeria.

* Corresponding author

Abstract

The objective of the research was to explain the possible mechanism of an earlier reported role of Aframomum sceptrum extract in the modulation of renal function parameters in monosodium glutamate-induced toxicity.

Materials and Methods. Similar experimental methods previously reported by us in Ogebeke et al., (2016) were maintained.

Results. Monosodium glutamate administration led to a significant elevation of levels of serum and kidney lipid peroxidation due to decrease in the levels of serum and kidney antioxidant enzyme, super oxide dismutase, catalase, glutathione peroxidase and glutathione. There was observed increase in oxidative enzyme, aldehyde oxidase, sulphite oxidase, xanthine oxidase and monoamine oxidase activities in serum and kidney after monosodium glutamate consumption. Aframomum sceptrum treatment significantly regulated all altered indices.

Conclusions. The study concluded that the ability of Aframomum sceptrum extract to modulate renal function parameters in monosodium glutamate-induced toxicity is dependent on its efficacy in the induction and mobilization of antioxidant defense armory via the increased synthesis of tissue and serum enzymatic and non-enzymatic antioxidants, as well as improved oxidative enzyme activities that mediates the quenching of rising aldehydes and sulfoxides, N-oxides and aromatic oxides within the kidney.

Author Keywords

Aframomum sceptrum, Oxidative stress, Monosodium glutamate, Mechanism of kidney function

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