



**Ain Shams University**  
**Institute of Environmental Studies and Research**  
**Basic Science Department**

## **Healthy Nutrition as an Effective Approach to Reduce the Toxicity Induced by Some Food Pollutants on Rats**

A Thesis

Submitted for Institute of Environmental Studies and Research in Partial Fulfillment for Master Degree in Science (M. Sc.) in (Environmental Science)

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**Nashwa Shoukry**  
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# ABSTRACT

## ABSTRACT

The aim of this study is to provide a baseline data for Shiga Toxin produced from *E. coli* (STEC) which isolated from some local and imported food products in Egyptian markets. Results showed that, different bacterial isolates (100 in total) were found in Luncheon, Basturma, Salami, Fesikh and Ringa. Two isolates among the bacterial isolates were suggested to be *E. coli* O157, one isolate was obtained from Luncheon (L18) and one was from Ringa (R12).

Biochemical tests for *E. coli* were applied using API 20E kit system and confirmed by Biomerieux Vitek-2 system. R12 isolate was able to produce endotoxin at concentration of 3457EU/ml. Forty adult male albino (Sprague Dawley) rats weighing  $175 \pm 25$ g were divided into 4 groups. Feed intake, body weight gain, feed efficiency ratio were evaluated at the end of experiment. Examination of serum chemistry values revealed a statistically significant increase ( $p < 0.001$ ) in serum urea, creatinine, ALT, AST and ALP. The histological examination of kidneys for both treated as well as control groups [group I (negative control), III (fish oil) and IV (flaxseed oil)] showed no pathological appearance except for group II (positive control) which showed congestion of renal blood vessel and focal mononuclear inflammatory cells infiltration. In the quantitative evaluation of liver histological changes, vacuolization, hydropic degeneration as well as slight activation of Kupffer cells of hepatocytes were observed in Stx treated rats (group II). While the histological examinations of livers for both treated as well as control groups showed no pathological appearance.

**Keywords:** Flaxseed oil, Fish oil, Shiga toxin, *E. coli* O157, Egyptian food.

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المستخلص العربي	أ - ب

# LIST OF ABBREVIATIONS