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بالرسالة صفحات

لم ترد بالأصل

HOSSAM MAGHRABY

THE EFFECT OF ENDOTOXIN-INDUCED STRESS ON SOME BIOCHEMICAL PARAMETERS IN BRAIN AND ITS MODULATION BY SOME ANTIOXIDANTS

Thesis
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FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN PHARMACEUTICAL SCIENCES
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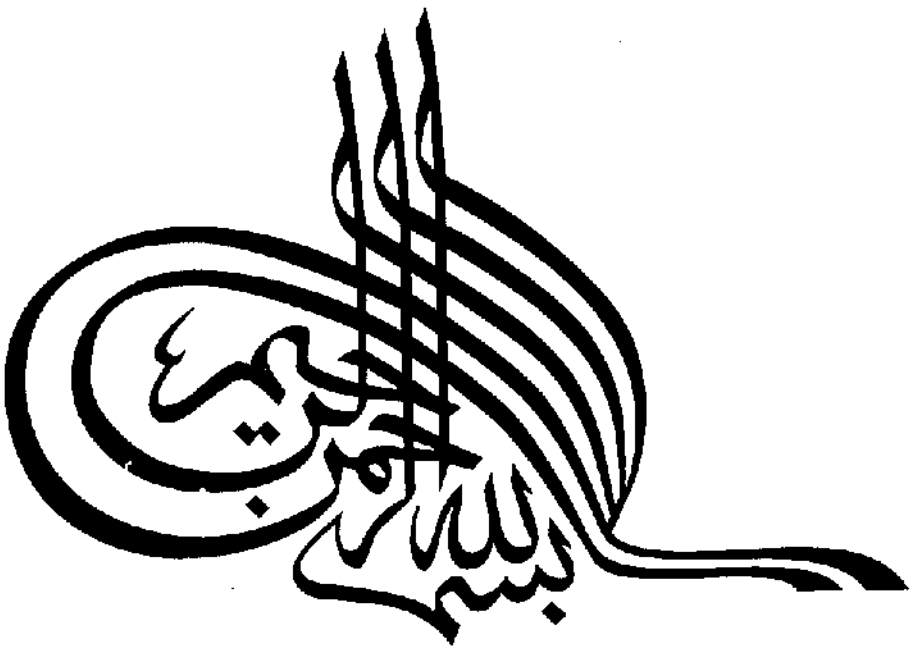
بسم الله الرحمن الرحيم

To My Family

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APPROVAL SHEET

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Committee in Charge

Date : / /1998

ABSTRACT

The purpose of this study was to determine the effect of endotoxin, lipopolysaccharide (LPS)-induced stress on some biochemical parameters in rat brain and its modulation by certain antioxidants such as vitamin E, selenium, β- carotene and N-acetylcysteine . I.P injection of LPS resulted in significant increase in plasma corticosterone (CS) and glucose levels and in brain MDA content and mitochondrial hexokinase activity. A marked reduction in brain GSH content, ATP / ADP ratio and cytosolic hexokinase activity was also noticed. However, the activities of SOD and Na^+, K^+-ATPase and the contents of cholesterol and phospholipids were not affected by LPS. Antioxidants ameliorated the oxidative status in rat brain by lowering the elevated levels of MDA and restoring GSH content. Mitochondrial hexokinase activity was also normalized indicating an improvement of membrane function. Plasma CS and glucose were decreased in response to antioxidant pretreatment. It appears that modification of free radical metabolism by antioxidants may be beneficial in improving the oxidative status produced by LPS.

Key words : Stress; Endotoxin; Brain; rat; Hexokinase; Na^+, K^+ - ATPase; Superoxide dismutase; β-Carotene; Vitamin E+Se; N-acetylcysteine.

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