شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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Hepatoprotective assessment of some essential oils against oxidative injuries induced by acetaminophen in rats

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Abstract

Hepatoprotective efficacy of *Elettaria cardamomum* (cardamom) seeds crude essential oil was evaluated in experimentally induced paracetamol (PCM) Hepato-renal toxicity in rats. Sixty-five male Sprague Dawley rats divided into six groups were used. First group was kept as control negative, while the 2nd group was given PCM (500 mg/kg bw). The 3rd and 4th groups were orally administered silymarin + PCM (500 mg/kg bw + 500 mg/kg bw), and cardamom oil + PCM (100 mg/kg bw + 500 mg/kg bw), respectively. The 5th and 6th groups were treated with silymarin (500 mg/kg bw) and cardamom oil (100 mg/kg bw), respectively. All the previous dosages lasted for two weeks. Blood samples collected weekly from all tested groups. Assessment of hemogram, leukogram, some serum biochemical parameters and histopathology of liver and kidney were carried out. Chemical compositions of cardamom oil was established by gas chromatography-mass spectrometry (GC-MS), revealed that the oil was rich in monoterpenoids. Results of PCM-intoxicated rats revealed significant decrease in total protein and albumin, hyperglycemia and elevation of serum transaminases, urea and creatinine. Administration of cardamom essential oil significantly ameliorates the hepato-renal profiles and elevates total antioxidant capacity. Moreover, the oil protects the liver and kidneys from histopathological alterations in PCM-intoxicated rats. Neither cardamom oil nor silymarin induce any alterations in serum biochemistry and hemogram in normal rats. The present results proved the ameliorative effect of cardamom essential oil against hepato-renal changes in PCM-intoxicated rats reasonably due to its potent antioxidant effect.

Keywords:
Cardamom Oil, Paracetamol, Silymarin, Antioxidant, Hepato-renal toxicity, Rats.

Dedication

To my Lovely Grand mother

To my Back bone Father

To my Beloved Mother

To my Soul mate Wife

To my Sweetheart Son

To my Supporting Sisters

To all of my family and everyone supported me during my work

Acknowledgment

*All thanks to our merciful **ALLAH** who gave me all the graces I enjoy in my life. His magnificent help and compassion gave me the ability and patience to finish this work.*

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LIST OF ABBREVIATION

Abbreviation	Complete words
PCM	Paracetamol
APAP	N-acetyl-p-amino-phenol
ALT	Alanine aminotransferase
AST	Aspartate aminotransferase
A/G ratio	Albumin/ Globulins ratio
ROS	Reactive Oxygen Species
RNS	Reactive Nitrogen Species
LFT	Liver Function Test
PT	Prothrombin Time
NCHS	National Center for Health Statistics
CDC	Centers for Disease Control and Prevention
DNA	Deoxyribonucleic Acid
HCV	Hepatitis C Virus
ALF	Acute Liver Failure
mg	Milligram
kg	Kilogram
g	Gram
B.Wt	Body weight
NPDS	National Poison Data System
UK	United Kingdom

Abbreviation	Complete words
USA	United States of America
NAPQI	N-acetyl-p-benzoquinone imine
GSH	Glutathione
ATP	Adenosine Triphosphate
ATN	Acute Tubular Necrosis
RUQ	Right upper Quadrant
MSOF	Multiple System Organ Failure
BC	Before Christ
IP	Intraperitoneal
Cyt. P450	Cytochrome P450 enzyme
SFE	Supercritical Fluid Extraction
CO_2	Carbon dioxide
RNA	Ribonucleic acid
GC-MS	Gas Chromatography-Mass Spectrometry
EOs	Essential Oils
EDTA	Ethylene Diamine Tetra Acetic acid
TAC	Total Anti – oxidant Capacity
CBC	Complete Blood Count
SD	Standard Deviation
NSAIDs	Non-Steroidal Anti – Inflammatory Drugs
P.O	Per Oral
RBCs	Red Blood Cells
Hb	Hemoglobin
PCV	Packed Cell Volume

Abbreviation	Complete words
MCV	Mean Corpuscular Volume
MCH	Mean Corpuscular Hemoglobin
MCHC	Mean Corpuscular Hemoglobin Concentration
TLC	Total Leucocytic Count
µL	Microliter
dl	Deciliter
fl	Flourished
pg	Pico gram
Mmol/l	Millimoles per liter
U/l	Unit per Liter
WHO	World Health Organization
H & E	Hematoxylin and Eosin stain

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