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
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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Title

Recent assessment approaches for detection of genotoxicity of some food additives in rats

Thesis submitted by

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(B. V. Sc. Cairo University, 2000)

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(Veterinary Pharmacology)

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Abstract

The present study assessed the long-term daily administration of Titanium dioxide "TiO_2, E171" & Acrylamide (ACR). Titanium dioxide and acrylamide are widely used as a food additives that exists in various everyday food products all over the world together with vast applications in cosmetics and industry. However, several toxicological issues, particularly after oral exposure. This study was planned to investigate the effect of oral exposure through oral gavage once daily for 90 consecutive days to two doses of TiO_2 and ACR which are (20 or 40 mg/kg bwt) AND (1 or 2 mg/kg b.wt.) respectively on the blood components, immunity, cytotoxic, and genotoxic indicators. The results revealed that a dose-dependent make leukopenia, eosinophilia, neutrophilia, and thrombocytopenia were noted. Also, the immunoglobins G (IgG) and IgM were significantly elevated the lysozyme levels, nitric oxide concentration, and phagocytic activity, immunoglobulin levels were significantly depleted. A significant reduced in lymphocyte proliferation but elevated LDH activity was prominent finally a marked increase in CD4 and CD8 immunolabeling was evident. Overall, these results indicated that TiO_2 and ACR exert hepatotoxic and immunotoxic effects with long-term exposure. these results indicated that the two-food additives could induce hematotoxicity, genotoxic, and immunotoxic alterations with exposure for long durations.
Keywords: Titanium dioxide; Acrylamide ;immune function; spleen; bone marrow; Comet;

Dedication

I wish to introduce my deep gratitude and

Utmost thanks to:

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List of Abbreviations

Item	Name
ACR	Acrylamide
CD4- cell	**T helper cells**
CD8- cell	Cytotoxic T cell
C	**Congestion**
DAB	Diaminobenzidine
DMEM	Dulbecco's Modified Eagle's medium
E	**Edema**
ELISA	Enzyme-Linked Immuno-Sorbent Assays
IgG	Immunoglobins G
IgM	Immunoglobins M
GC-MS	**Gas chromatography–Mass Spectrometry**
HBSS	Hank's balanced salt solution
Hb	Hemoglobin
HM	**Hematopoietic marrow elements**
HR	**Hyperplasia**
HO	**Hypoplasia**
H	**Hemorrhage**
IARC	The International Agency for Research on Cancer

KOH	Potassium hydroxide
LDH	***Lactate dehydrogenase***
MCHC	Mean corpuscular hemoglobin concentration
MCV	Mean cell volume
MCHC	Mean corpuscular hemoglobin concentration
MOE	Margin of exposure (MOE)
M	**Megakaryocytes**
NBT	Colorimetric nitroblue tetrazolium assay
NO	Nitric oxide
NK	Natural killer cells
PBS	Phosphate buffered saline
PCV	Packed cell volume
PALS	**Peri-arterial lymphoid sheath:**
RBCs	Red blood cells in total
T	**Bone trabecular**
TiO_2	Titanium dioxide