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شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم





جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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بالرسالة صفحات لم ترد بالأصل







"Application of curcumin-magnetic nanoparticles for the diagnosis of Alzheimer's disease using Drosophila melanogaster (Drosophilidae: Diptera) as a study model"

A thesis submitted in partial fulfillment for the award of Master of Science Degree (M.Sc.) in Entomology Ain Shams University

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ABBREVIATIONS:

AD Alzheimer disease

APoE Apolipoprotein E

APP Amyloid precursor protein

APPL β-amyloid protein precursor like

ATCC American Type Culture Collection

ATP Adenosine triphosphate

Aβ Amyloid beta

BBB Blood Brain Barrier

BHK Baby Hamster Kidney fibroblasts

cDNA Complementary DNA

CSF Cerebrospinal fluid

CTCF Corrected Total Cell Fluorescence

Cur-MNPs Curcumin-Magnetic Nanoparticles

DLS Dynamic Light Scattering

DMEM Dulbecco's Modified Eagle Medium

DMSO Dimethyl sulfoxide

DNA Deoxyribonucleic acid

dNTP Deoxynucleoside triphosphate

FAD Familial Alzheimer disease

FBS Fetal bovine serum

FDA Food and Drug Administration

Fe3O2 Iron Oxide

FePt Iron Platinum

H Hour

IC50 The half maximal inhibitory concentration

IntDen Integrated Density

ABBREVIATIONS

Io-MNPs Iron Oxide Magnetic Nanoparticles

MNPs Magnetic Nanoparticles

MRI Magnetic resonance imaging

MTT Tetrazolium Salt, 3-4,5 Dimethylthiazol-2,5

Diphenyl Tetrazolium Bromide

N18TG2 Neuroblastoma cells

Nep2 Neprilysin-2

NIRF Near-Infrared Fluorescence

O.D Optical density

PBS Phosphate Buffer Saline

PCR Polymerase Chain Reaction

PDB Protein Data Bank

PET Positron Emission Tomography

Psn Presenilin

RNA Ribonucleic acid

Ros Reactive Oxygen Species

RPMI Roswell Park Memorial Institute medium

RTC Research and Training Center on vector of

diseases

RT-PCR Reverse transcription polymerase chain

reaction

SD Standard Deviation

TEM Transmission Electron Microscopy

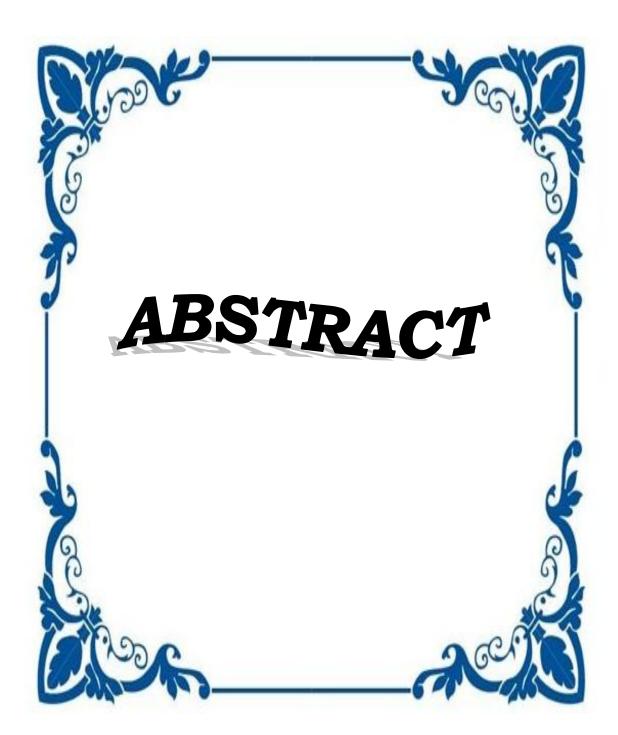
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Abstract

Alzheimer's disease (AD) is a neurological disorder associated with the over expression of amyloid-beta (A β) protein that appears to be the main causative reason.

Drosophila melanogaster is considered as a very significant model organism to study human neurodegeneration including AD, and this seems to be a valuable tool for researchers to improve a new diagnostic approach for neurodegenerative diseases.

There are many new techniques used for diagnosis of AD, including curcumin and nanoparticles. The conjugation of curcumin with magnetic nanoparticles make it a promising potential method for diagnosis.

The purpose of this study is to diagnose the AD by detecting the accumulation of A β via curcumin-magnetic nanoparticles with using *D.melalogaster* and fluorescence imaging technique for detection.

The accumulation of amyloid beta-peptide has been detected via the conjugate using the fluorescence imagining technique. These results suggest that curcumin- magnetic nanoparticles conjugation could be used as a diagnostic tool for AD.

