Hepatoprotective activity of *pistachia khinjuk*

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2017

Hepatoprotective Activity of *Pistachia khinjuk*

Submitted to University of Management and Technology Lahore

In partial fulfillment of the requirements

For the award of degree of

MS

IN

CHEMISTRY

BY

Tayyaba Mushtaq

ID

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SESSION: 2015-2017

Department of chemistry

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RESEARCH COMPLETION CERTIFICATE

Certified that the research work contained in this thesis titled," Hepatoprotective Activity of *Pistachia khinjuk*" has been carried out and completed by TAYYABA MUSHTAQ **, ID: 15004140007.**The quantum and the quality of the work contained in this thesis is adequate for the award of Degree of MS/M.Phil.

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DECLARATION

I **TAYYABA MUSHTAQ** D/O **MUSHTAQ AHMADID: 15004140007** Session**2015-2017** hereby declare that the matter printed in the thesis titled **"Hepatoprotective Activity of *Pistachia khinjuk*"**is my own work and has not been printed, published and submitted as research work, thesis or publication in any form in any University, Research institution etc. in Pakistan or Abroad.

Dated: _____ **_____**

(Tayyaba Mushtaq)

This thesis is proudly

DEDICATED

To

All my beloved family

My Parents

(Mr. And Mrs. Mushtaq Ahmad),

brothers and sisters specially Shumaila Mushtaq(Late) and to my friends who stood with me in this valueable journey.And special dedications to my niece and nephew.

(Ahla and Abdul Bazil)

Thanks for your endless love,

sacrifices, prayers, supports and advices.

ACKNOWLEDGEMENT

All my praises and love belongs to **ALLAH ALMIGHTY,** the most Merciful, the most Beneficent, Ruler of the Universes, Who created everything, from the sub-particles of an atom to this universe. He, who's Praise, has no bounds. He has been with me through thick and thin of life and enabled me in tiding over the difficulties. His perpetuate patronage is Treasure of my life.

Many respects and praises for HIS last **PROPHET MUHAMMAD (P.B.U.H)** Who himself has been sent as a teacher for the whole world to enable us to recognize our Creator and understand the meaning of life. He remains the torch of knowledge and guidance for humanity.

I sincerely acknowledge the support of our, Dean Prof. **Dr. Muhammad Azhar Iqbal** (School of Science, UMT), especially my supervisor **Dr. Sammia Shahid**, and to my Teachers who mentored me in this journey. My warm regards for my friends **SMAAAAKTS**: Sidra, Madiha, Ayesha, Anum, Anee, Alishba, Khizra and Saima.

I would like to acknowledge **Dr. Atif Yaqub** (Associate Professor), Department of Zoology, **GCU Lahore** for their help and guidance, specially giving us permission to work at GC.

I would like to extend my thanks to the helping staff of UMT lab attendants, coordinator and co-workers: Saima, Amna, Zahid, who guide us in operating apparatus, chemicals, animals and instruments. And warm thanks to the lab attendants and Sami Ullah (Student) of Veterinary University of Animal Sciences, Lahore helping us in hepatoprotective activity's results and discussions.

I would like to express my deepest gratitude and can never pay reward to my parents **Mr. & Mrs. Mushtaq Ahmad** who have always given me encouragement and motivations and to my brothers and sisters who are very helping and caring.

Tayyaba Mushtaq

ABSTRACT

The present investigations were carried out to establish the medicinal value of *Pistachia khinjuk* synonym Shiney. This medicinal plant belongs to the family Anacardiaceae (cashews) including more than 700 species of 82 generas. Pistachia is widely distributed in the Mediterranean region. *Pistacia khinjuk* can grow up to 25 meters in length and thrive in arid and semi-arid areas. In this research the objective was to test the hepatoprotective activity by the induction of CCl_4 to the Swiss Albino Mice. The seeds extract in different doses 100 mg/kg, 250 mg/kg, 500 mg/kg were given orally to albino mice groups, each group contained six mice. The dose was given for fourteen days and on 15^{th} day a healthy mouse of each group was dissected blood was taken in EDTA tubes and liver was preserved in Formalin solution. The blood was tested by ALTs kit. It was observed that the levels of serum enzymes such as Serum Glutamate Oxaloacetate transaminase (SGOT), Alkaline Phosphate (ALKP), Serum Glutamate Pyruvate Transaminase (SGPT), and bilirubin levels were decreased. For the purpose of comparative study silymarin was used as a standard drug. The results revealed that , the values of SGOT, SGPT, ALKP and Bilirubin were 61.05, 57.55, 138.31, 0.91 for positive control group, 85.48, 55.29, 138.31, 0.46 for negative control group, 119.99, 107.09, 151.96, 1.43 for *P.khinjuk* group (100 mg/kg), 89.89, 94.41, 191.46, 1.09 for *P.khinjuk* group (250 mg/kg) and 69.47, 72.21, 164.35, 0.79 for *P.khinjuk* group (500 mg/kg) repectively. The histopathological studies of mice liver were carried out . The histopathology study showed that the plant extract of 100mg/kg showed less positive effect rather than 250 mg/kg and 500 mg/kg showed high and positive effect than other concentrations(100 mg/kg, 250 mg/kg) against CCl_4 damage. The results of this study on the seed extract of *Pistacia khinjuk* confirmed excellent hepatoprotective activity against CCl_4 damaged liver in albino mice. This study proved that *Pistacia khinjuk* acts as an indigenous plant which is highly effective plant for the liver diseases. In future further work is required to isolate chemical and biological constituents from the seeds and to check biological activity of purified constituents.

CONTENTS

LIST OF FIGURE

LIST OF TABLES

1 INTRODUCTION

1.1 The Role of Plants in Human History

Human used plants for centuries to meet basic needs, such as food, clothing and shelter, all of which produce or manufacture from plants (leaves, forests and fibers) and parts (fruit and tubers). Plants are also used for other purposes, such as toxins and hunting of darts and toxins to kill and for the purpose of sacrifice, steroids Anas - Indur, and the elimination of hunger, as well as drug addicts and drug hallucinogens. For the latter purpose the phytochemicals are largely metabolized to the secondary, which leads to primary metabolism of plants (eg carbohydrates, amino acids, lipids) that are not directly involved in plant growth, development or reproduction. This metabolism can be classified into several classes according to chemical categories, such as alkaloids, Terpinoad, and phenols. [Salim, 2008]