

Hepatoprotective Activity of *Pistachia khinjuk*



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SESSION: 2015-2017

**DEPARTMENT OF CHEMISTRY
SCHOOL OF SCIENCE
UNIVERSITY OF MANAGEMENT AND TECHNOLOGY,
LAHORE, PAKISTAN**



In the name of
Allah,
The most Compassionate,
The most merciful

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 Session2015-2017 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.

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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.

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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 genera. *Pistachia* is widely distributed in the Mediterranean region. *Pistachia 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 CCl₄ 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 15th 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) respectively. 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 CCl₄ damage. The results of this study on the seed extract of *Pistachia khinjuk* confirmed excellent hepatoprotective activity against CCl₄ damaged liver in albino mice. This study proved that *Pistachia 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.

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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]