

Screening of radical scavenging activity of
***tanacetum parthenium* l.**



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IN
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BY
ELIF AVCU

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

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**“IN THE NAME OF ALLAH, THE BENEFICENT, THE
MERCIFUL.”**

Praise be to Allah the cherisher and sustainer of the worlds...

Most gracious, most Merciful...

Master of the Day of Judgment...

Thee do we worship, and thine aid we seek...

Show us the straightway...

The way of those on whom thou has bestowed thy grace, those

Whose (portion) is not wrath. And who go not astray...

RESEARCH COMPLETION CERTIFICATE

Certified that the research work contained in this thesis titled, “screening of radical scavenging activity of *Tanacetum Parthenium* L.” has been carried out and completed by **Elif Avcu, ID: 13001140043**. 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 **Elif Avcu** D/O Sabri Uludag **ID: 13004110043** Session hereby declare that the matter printed in the thesis titled **“Screening of radical scavenging activity of *Tanacetum parthenium* L.”** 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: _____

(Elif Avcu)

DEDICATED

TO

ALLAH ALMIGHTY

&

*HIS BELOVED PROPHET
GREAT & IDEAL PERSONALITY*

*HAZRAT MUHAMMAD
(P.B.U.H)*

ACKNOWLEDGEMENT

*All praises are for greatest and **ALLAH ALMIGHTY** who guides us in darkness and helps in difficulties. Infinite thanks to him who enabled me to complete this task. I am all the tribute to **HOLLY PROPHET MUHAMMAD (P.B.U.H)**, the city of knowledge, torch of guidance who has guided his ummah to the knowledge from cradle to grave. I would pay bundle of Darood-o-salam to the Holly Prophet (salla-laho-alaihy-wa-alyhe-wasallum). This was possible only due to grace of Almighty **ALLAH**, Whose blessings are cherished fruit of our modest efforts to overcome the problems and difficulties.*

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*May **ALLAH** give them His blessings along happy life.*

ELIF AUVC

ABSTRACT

The medicinal plants are considered more effective as they have only few side effects as compared to synthetic drugs. The bioactive chemicals used to treat cancer were obtained from plants. In past many plants were used to treat many problems associated with pain and inflammations, respiratory problems, chronic, acute arthritis and joint pain. *Tanacetum parthenium* also called feverfew belong to Composite family (*Asteraceae*) and many chemical compounds were found in the feverfew. *Tanacetum parthenium* shows many types of activities like anti-inflammatory, anti-cancer and anti-oxidant. *Tanacetum parthenium* was used to treat different diseases in Europe including mental disorders, stomach ulcer and inflammatory problems and its methanolic extract was used to against breast cancer. The different extracts of *Tanacetum parthenium* was used as anticancer agent. The methanol extract of plant partitioned with ethyl acetate solvent has strong cytotoxic effect. The methanol extract of *Tanacetum parthenium* showed strong effective control as antioxidant. The consequences of the present study showed that phenolic mixes are great foragers of free radicals as exhibited by a decent connection of DPPH rummaging action with TPC, while concentrating on the concentrates of *Tanacetum parthenium*. Thus, distinctive distributed techniques have been utilized to quantify absolute cancer prevention agent movement by reducing free radicals. The aqueous and methanolic extracts were compared and different methods confirmed the strong free radical scavenging activity.

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CHAPTER 1

INTRODUCTION

- ✚ Nature is serving humanity from centuries. Plants/Herbs present in nature are also good friends of human. These natural products are accountable in a beneficial way they are not only give food but also provide shelter .
- ✚ Plants are used to cure and treatment of various diseases without giving harm. Different parts of plants like their roots, stems, leaves and flowers are utilize in preparing ointments and medicines for fighting with many kinds of ailments.

1.1 Tanacetum parthenium

- ✚ The genus of this plant contains nearly 50 species. *Tanacetum parthenium* also called feverfew belong to Composite family (*Asteraceae*). Its leaves resemble with daisy plants and found in gardens and open places. There are many common name of the *Tanacetum parthenium* but feverfew was used mostly.
- ✚ There are many chemical compounds were found in the feverfew. But parthenolide was the most important because it was a lactone and used as a drug to kill cancerous cell.
- ✚ The origin of parthenium is not certain. In fifth century according to Greek an incident happened during the construction of Parthenon. A person fallen from it and parthenolide used to save his life. Due to feathery appearance of leaves feverfew is often called featherfew. Feverfew is small, aromatic and annual herb that has 0.2–1 m height and 6-8 mm diameters. Its leaves are usually yellowish green 8 cm long and mostly resemble with *chrysanthemum* [Hobbs, 1989].