THERAPEUTIC EVALUATION OF FUNGI FROM GUJARAT

THESIS SUBMITTED TO

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

IN

BOTANY

BY

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AUGUST 2022

Recommendation

The study of fungi diversity and their potential applications in biotherapeutics has garnered increasing attention in recent years. Fungi, as a diverse group of organisms, possess remarkable biochemical properties that hold significant promise for the development of novel therapeutic interventions. This Ph.D. thesis aims to explore the vast potential of fungi as a source of biotherapeutics and provides recommendations for future research in this field. Through comprehensive analysis, the thesis identifies key areas that require further investigation, highlights current challenges, and proposes innovative approaches to harness the power of fungal diversity in the development of biotherapeutic solutions. Present Ph. D. thesis is divided in the following chapters.

Chapter 1: Introduction

1.1 Background

1.2 Overview of fungal biodiversity

1.3 Research objectives

Chapter 2: Review of Literature

2.1 Therapeutic potential of fungi

2.2 Bioactive compounds produced by fungi

2.3 Importance of fungal in biotherapeutics

Chapter 3: Taxonomy and Molecular Identification of Some Important Macro-Fungi

3.1 Collection and morphological identification of fungi

3.2 Molecular identification of fungi

3.3 DNA barcoding of fungi

Chapter 4: Metabolite Profiling and Therapeutic Potential of Macro-Fungi

4.1 Extraction of fungal bioactive compounds

4.2 Antioxidant and anticancer potentials

4.3 Identification of bioactive metabolites using HR-LC/MS analysis

4.4 *In silico* analysis of fungal metabolites as potential inhibitors against main protease of SARS-CoV-2

Chapter 5: Summary and Conclusion

6.1 Summary of findings

6.2 Contributions to the field

6.3 Future directions and potential impact

By providing a comprehensive overview of fungi diversity and their potential applications in biotherapeutics, this Ph.D. thesis aims to serve as a valuable resource for researchers, biotechnologists, and pharmaceutical industries interested in exploring the untapped potential of fungi. The recommendations presented herein offer a roadmap for future research, highlighting the need for interdisciplinary collaboration, technological advancements, and regulatory frameworks to unlock the full therapeutic potential of fungal biotherapeutics. Through concerted efforts, it is envisioned that the findings of this thesis will contribute to the development of innovative treatments and therapies for a range of human diseases, thus improving global healthcare outcomes.