

**Characterization of an unexplored lichen *Hypotrachyna infirma*
(Kurok.) Hale and its selected endolichenic fungi for
biological properties**

*Thesis submitted to the Bharathiar University in partial
fulfilment for the award of the degree of*

DOCTOR OF PHILOSOPHY IN BOTANY

By

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Under the guidance of

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This is to certify that Ph.D candidate Mrs.R.Gokilavani working under my supervision has published three research articles and one review article in the standard journals named.

1. **Plant archives.** Vol. No 20(2): 3777-3783, 2020 “Biological properties of lichens- A review by R.Gokilavani, H.Rehana banu, (UGC approved journal)
2. **Asian Journal of Phytomedicine and Clinical Research.** Vol. No 8(2): 95-103, 2020. “GC-MS analysis of the methanolic extract of *Hypotrachyna infirma* (Kurok.) Hale” by R.Gokilavani, H.Rehana banu (UGC approved journal)
3. **International Journal of Pharmacy and Pharmaceutical Sciences.** Vol. No 13(8): 0975-1491, 2021. “Phytochemical studies of endolichenic fungi isolated from *Hypotrachyna infirma* (Kurok.) Hale” by R.Gokilavani, H.Rehana banu (UGC approved Journal).
4. **Research Journal of Biotechnology.** “GC-MS analysis of endolichenic fungus isolated from *Hypotrachyna infirma* (kurok.) Hale” by R.Gokilavani, H.Rehana banu (SCOPUS)

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List of Tables

LIST OF TABLES

Table No.	Title of the Table
1.	Lichens and their uses in folk medicines
2.	Biological targets of lichen and their compounds
3.	Natural product and biological activity of endolichenic fungi isolated from lichen
4.	Compounds of endolichenic fungi and their biological activity
5.	Percentage yield of <i>Hypotrachyna infirma</i>
6.	Qualitative analysis of <i>H. infirma</i>
7.	Quantitative analysis of <i>H. infirma</i> in different solvents
8.	GC-MS analysis of <i>Hypotrachyna infirma</i>
9.	Antibacterial activity of Methanol extract of <i>Hypotrachyna infirma</i>
10.	Antifungal activity of Methanol extract of <i>Hypotrachyna infirma</i>
11.	DPPH scavenging activity of the methanol extract of <i>Hypotrachyna infirma</i>
12.	Hydrogen peroxide scavenging activity of the methanol extract of <i>Hypotrachyna infirma</i>
13.	Total antioxidant activity of the methanol extract of <i>Hypotrachyna infirma</i>
14.	Superoxide radical scavenging activity of the methanol extract of <i>Hypotrachyna infirma</i>
15.	Nitric oxide radical scavenging activity of the methanol extract of <i>Hypotrachyna infirma</i>
16.	Isolation of endolichenic fungi using different medium
17.	Isolation of endolichenic fungi using different pH
18.	Isolation of endolichenic fungi using different Temperature
19.	Preliminary phytochemical constituents of the endolichenic fungal isolates in two different extracts
20.	Quantitative phytochemical analysis of endolichenic fungi
21.	Name of the isolated endolichenic fungi
22.	Major chemical constituents of <i>Scytalidium lignicola</i> in GC-MS chromatogram
23.	Major chemical constituents of <i>Nigrospora oryzae</i> in GC-MS chromatogram
24.	Major chemical constituents of <i>Geotrichum candidum</i> in GC-MS chromatogram
25.	Major chemical constituents of <i>Aspergillus oryzae</i> in GC-MS chromatogram
26.	Major chemical constituents of <i>Aspergillus niger</i> in GC-MS chromatogram
27.	Antibacterial activity of isolated endolichenic fungi against pathogenic bacteria <i>Escherichia coli</i>
28.	Antibacterial activity of isolated endolichenic fungi against pathogenic bacteria <i>Streptococcus sp.</i>
29.	Antibacterial activity of isolated endolichenic fungi against pathogenic bacteria <i>Staphylococcus aureus</i>

30.	Antifungal activity of isolated endolichenic fungi against pathogenic fungus <i>Candida albicans</i>
31.	Antifungal activity of isolated endolichenic fungi against pathogenic fungus <i>Aspergillus niger</i>
32.	DPPH radical activity of the endolichenic fungi
33.	Hydrogen peroxide scavenging activity of the endolichenic fungi
34.	Total antioxidant activity of the endolichenic fungi
35.	Superoxide anion radical scavenging activity
36.	Nitric oxide scavenging activity of the endolichenic fungi
37.	Albumin denaturation assay
38.	Membrane stabilization assay
39.	Docking Parameters for BEP
40.	Docking Parameters for DME
41.	<i>In vitro</i> cytotoxic activity of <i>Hypotrachyna infirma</i> using MTT assay
42.	<i>In vitro</i> cytotoxic activity of the endolichenic fungus <i>Nigrospora oryzae</i> using MTT assay
43.	Cytotoxic activity of Samples ($\mu\text{g/ml}$) using MTT Assay expressed as Inhibitory Concentration
44.	Components detected in the methanol extract of <i>Hypotrachyna infirma</i> using FT-IR spectroscopy
45.	Components detected in ethyl acetate extract of <i>Nigrospora oryzae</i> using FT-IR spectroscopy

List of Figures

LIST OF FIGURES

FIGURE NO	TITLE OF THE FIGURE
1	Map showing the location of the study area Sholaiyar, Anaimalai hills
2	GC-MS chromatogram of <i>Hypotrachyna infirma</i>
3	GC-MS chromatogram of <i>Scytalidium lignicola</i>
4	GC-MS chromatogram of <i>Nigrospora oryzae</i>
5	GC-MS chromatogram of <i>Geotrichum candidum</i>
6	GC-MS chromatogram of <i>Aspergillus oryzae</i>
7	GC-MS chromatogram of <i>Aspergillus niger</i>
8	Structure of Active Protease (FXa) – Drug Target for Breast Cancer
9	Structure of Vascular Endothelial Growth Factor Receptor 1 – Drug Target for Liver cancer
10	2D structure of Bis(2-ethylhexyl) phthalate (BEP)
11	3D structure of Bis(2-ethylhexyl) phthalate (BEP)
12	2D Structure of Dodecanoic acid, Methyl ester (DME)
13	3D Structure of Dodecanoic acid, Methyl ester (DME)
14	Interactions between BEP and drug target for breast cancer, active protease
15	Surface representation of the Interactions between BEP and drug target for breast cancer, active protease
16	Interactions between BEP and drug target for liver cancer, Vascular Endothelial Growth Factor Receptor 1
17	Surface representation of the Interactions between BEP and drug target for liver cancer, Vascular Endothelial Growth Factor Receptor 1
18	Interactions between DME and drug target for breast cancer, active protease
19	Surface representation of Interactions between DME and drug target for breast cancer, active protease
20	Interactions between DME and drug target for liver cancer, Vascular Endothelial Growth Factor Receptor 1
21	Surface representation of the Interactions between DME and drug target for liver cancer, Vascular Endothelial Growth Factor Receptor 1
22	<i>In vitro</i> cytotoxic activity of <i>Hypotrachyna infirma</i> using MTT assay
23	<i>In vitro</i> cytotoxic activity of the endolichenic fungus <i>Nigrospora oryzae</i> using MTT assay
24	FT-IR spectrum analysis of ethyl acetate extract of <i>Nigrospora oryzae</i>
25	FT-IR spectrum analysis of methanol extract of <i>Hypotrachyna infirma</i>
26	SEM images of <i>Hypotrachyna infirma</i> extract treated with silver nitrate
27	SEM images of <i>Nigrospora oryzae</i> extract treated with silver nitrate

List of Plates

LIST OF PLATES

PLATE NO.	TITLE OF THE PLATE
1.	Habit of the study species <i>Hypotrachyna infirma</i> (Kurok.) Hale
2.	Antimicrobial activity of methanol extract of <i>Hypotrachyna infirma</i>
3.	Microscopic images of the isolated endolichenic fungi
4.	Microscopic images of the isolated endolichenic fungi
5.	Microscopic images of the isolated endolichenic fungi
6.	Microscopic images of the isolated endolichenic fungi
7.	Microscopic images of the isolated endolichenic fungi
8.	Microscopic images of the isolated endolichenic fungi
9.	Microscopic images of the isolated endolichenic fungi
10.	Microscopic images of the isolated endolichenic fungi
11.	Antibacterial activity of (a) <i>Scytalidium lignicola</i> (b) <i>Geotrichum candidum</i> (c) <i>Nigrospora oryzae</i> (d) <i>Aspergillus niger</i> (e) <i>Aspergillus oryzae</i> against tested pathogen <i>Escherichia coli</i>
12.	Antibacterial activity of (a) <i>Scytalidium lignicola</i> (b) <i>Geotrichum candidum</i> (c) <i>Nigrospora oryzae</i> (d) <i>Aspergillus niger</i> (e) <i>Aspergillus oryzae</i> against tested pathogen <i>Streptococcus sp.</i> ,
13.	Antibacterial activity of (a) <i>Scytalidium lignicola</i> (b) <i>Geotrichum candidum</i> (c) <i>Nigrospora oryzae</i> (d) <i>Aspergillus niger</i> (e) <i>Aspergillus oryzae</i> against tested pathogen <i>Staphylococcus aureus</i>
14.	Antifungal activity of (a) <i>Scytalidium lignicola</i> (b) <i>Geotrichum candidum</i> (c) <i>Nigrospora oryzae</i> (d) <i>Aspergillus niger</i> (e) <i>Aspergillus oryzae</i> against tested pathogen <i>Candida albicans</i>
15.	Antifungal activity of (a) <i>Scytalidium lignicola</i> (b) <i>Geotrichum candidum</i> (c) <i>Nigrospora oryzae</i> (d) <i>Aspergillus niger</i> against tested pathogen <i>Aspergillus niger</i> .
16.	<i>In vitro</i> cytotoxic activity of the lichen <i>Hypotrachyna infirma</i>
17.	<i>In vitro</i> cytotoxic activity of the endolichenic fungus <i>Nigrospora oryzae</i>
18.	Colour change in <i>Nigrospora oryzae</i> extract
19.	Colour change in <i>H. infirma</i> extract

List of Units

LIST OF UNITS

%	-	Percentage
°C	-	Degree celsius
Cm	-	Centimetre
ft	-	Feet
gm	-	Gram
g/l	-	Gram per litre
km	-	Kilometer
mm	-	Millimeter
ml	-	Millilitre
mg/ml	-	Milligram per millilitre
ml/min	-	Millilitre per minute
mM	-	Milli Molar
nm	-	Nanometer
pH	-	Potential of Hydrogen
gm/L	-	Gram per litre
rpm	-	Rotation per minute
μl	-	Microlitre
μg/ml	-	Microgram per microlitre
μg	-	Microgram

List of Abbreviations

LIST OF ABBREVIATIONS

ANOVA	-	Analysis of Variance
BSS	-	Balanced Salt Solution
Cd	-	Critical Difference
DMSO	-	Dimethyl sulfoxide DPPH – 2,2 -diphenyl-1-picrylhydrazyl
ELISA	-	Enzyme- linked immunoassay
EDTA	-	Ethylene diamine tetra acetic acid
FRAP	-	Ferric reducing antioxidant power
FTIR	-	Fourier transform infrared spectroscopy
GCMS	-	Gas Chromatography and Mass Spectrometry
HCl	-	Hydrochloric acid
HepG2	-	Hepatocellular carcinoma
H ₂ O ₂	-	Hydrogen Peroxide
MTT	-	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide)
NaOH	-	Sodium hydroxide
NaCl	-	Sodium Chloride
NaNO ₂	-	Sodium Nitrite
NCCS	-	National Center for Cell Sciences
pH	-	Potential of Hydrogen
S.E.D	-	Standard Error of the Difference
S.E.M	-	Standard Error of the Mean
UV	-	Ultraviolet
WHO	-	World Health Organization