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# Phytochemical Investigation And Antimicrobial Properties

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ANTIMICROBIAL ACTIVITY AND PHYTOCHEMICAL STUDY OF ALOE VERA GEL CRUID EXTRACT

Phytochemistry of Medicinal Plants

Medicinal Plants and Traditional Medicine in Africa

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Phytochemical Screening on Antioxidant and Antimicrobial Properties of *Mucuna Bracteata*

Antibacterial activity of the flower extracts of *Caesalpinia pulcherrima* L. against eye

infection causing pathogens

Phytochemical Analysis and Antimicrobial Activity of Piper Capense L.F.

Phytochemical Screening and Antimicrobial Activity of Compounds from Selected Medicinal and Aromatic Plants

Annona reticulata: Characteristics and activities using various solvents

The Honey Apple and its phytochemical analysis

New Advances and Challenges

An Experimental Text Book on Phytochemical Analysis and Antimicrobial Activity of Mentha Piperita

Phytochemical Screening and Antimicrobial Activity of Plant Extracts of Semalu Plant (Mimosa Pudica L.)

Phytochemical Screening and Antimicrobial Activity of Stachytarpheta Jamaicensis 'purple' and Stachytarpheta Jamaicensis 'white'

*Phytochemical  
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Antimicrobial  
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## FRENCH RILEY

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*ANTIMICROBIAL ACTIVITY AND PHYTOCHEMICAL STUDY OF ALOE VERA GEL CRUID EXTRACT* Prem Jose  
Scientific Study from the year 2016 in the subject Biology - Micro- and Molecular Biology, grade: 1.5, Mar Augusthinose College, language: English, abstract: Citrus, one of the major genes of Rutaceae family and most economically important fruit tree and widely cultivated throughout the country. The Citrus have high nutritional value and medicinal value. Honey and lemon-honey are traditional remedies in the Middle East and China and for many centuries and have been used in the treatment and prevention of the common cold and various upper respiratory tract infections. Three types of honey were collected; 'Cheruthen'- produced by bees belongs to the Trigona irridipennis species; Vanthen'- produced by bees belongs to the Apis indica species; 'Kattutthen'- produced by bees belongs to the Apis dorsata species. The antibacterial activities of honey samples and lime juice were tested against

Bacillus, Klebsiella, E.coli, Staphylococcus and Micrococcus. The result showed that the samples have different antimicrobial activity.

Antimicrobial activity of Cheruthen against Klebsiella species showed a zone of inhibition of  $10.1 \pm 0.73$  mm, when 100  $\mu$ l of Cheruthen is applied. When 200  $\mu$ l of Cheruthen is applied the zone of inhibition was  $30.1 \pm 0.23$  mm. Antimicrobial activity of Cheruthen against E.coli showed a zone of inhibition of  $10.1 \pm 0.13$  mm, when 100  $\mu$ l of cheruthen is applied. When 200  $\mu$ l of cheruthen is applied the zone of inhibition was  $30.2 \pm 0.23$  mm. Also the phytochemical examination of lime juice and honey samples showed that different types of phytochemical substances are present in both lime juice and different types of honey samples. Further studies are required to reveal the role of each phytochemical and its contribution to the antimicrobial properties of the samples included in this study.

*Phytochemistry of Medicinal Plants* GRIN Verlag

Phytochemicals from medicinal plants are receiving ever greater attention in the scientific literature, in medicine, and in the world economy in general. For

example, the global value of plant-derived pharmaceuticals will reach \$500 billion in the year 2000 in the OECD countries. In the developing countries, over-the-counter remedies and "ethical phytomedicines," which are standardized toxicologically and clinically defined crude drugs, are seen as a promising low cost alternatives in primary health care. The field also has benefited greatly in recent years from the interaction of the study of traditional ethnobotanical knowledge and the application of modern phytochemical analysis and biological activity studies to medicinal plants. The papers on this topic assembled in the present volume were presented at the annual meeting of the Phytochemical Society of North America, held in Mexico City, August 15-19, 1994. This meeting location was chosen at the time of entry of Mexico into the North American Free Trade Agreement as another way to celebrate the closer ties between Mexico, the United States, and Canada. The meeting site was the historic Calinda Geneve Hotel in Mexico City, a most appropriate site to host a group of phytochemists, since it was the address of Russel Marker. Marker lived at the hotel, and his famous papers on steroidal saponins from *Dioscorea composita*, which launched the birth control pill, bear the address of the hotel.

Medicinal Plants and Traditional Medicine in Africa BoD - Books on Demand

First published in 1970, previous edition in 1985. MCM5 is enlarged and restructured to keep pace with new developments and technology. Users must have knowledge of the fundamentals of microbiology and possess basic laboratory skills. Operational and organizational chapters address topics ranging from collecting

and managing clinical specimens to selecting the best methodological approach for determining strain identity. Subsequent chapters deal with specific microorganisms as etiologic agents and with the clinical microbiologic laboratory in various treatment and research functions. Member price, \$64.

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*Manual of Clinical Microbiology* Book Rivers

Doctoral Thesis / Dissertation from the year 2012 in the subject Chemistry - Analytical Chemistry, grade: 3, Kachchh University (Department of Chemistry), course: MSc, language: English, abstract: *Moringa oleifera*, an important medicinal plant is one of the most widely cultivated species of the family Moringaceae. It is highly valued from time immemorial because of its vast medicinal properties. The present study provides all necessary information regarding of four parts such as flower, leaves, seed and pulp of moringa like biochemical, phytochemical, mineral, antibacterial activity and its nutritional value. The benefits of essential nutrients and minerals for maintaining good health were also highlighted in this study. The results of proximate analysis of *Moringa oleifera* revealed that the protein (9.37%), carbohydrate (7.33%), ascorbic acid (2.10%) and total soluble sugar (0.73%) were highest in flower as compared to leaves, seed and pulp. While free amino acid (9.84%) was found to be higher in seed, total phenol (0.29%) was higher in leaves and reducing sugar (0.43%) higher in pulp of the moringa. The result of qualitative analysis of amino acid represented that lysine, glycine, threonine, valine, Isoleucine, tryptophan, alanine and cystein were present in moringa. The

flower also contained higher amounts of crude fibre (0.23%) as well as moisture (90.56%), while fat (15.53%) content was found higher in seed. The dry matter (30.40%) and total ash (2.12%) content were higher in leaves. The ash content represented minerals in different amounts. The higher amount of potassium was found in flower (50.9%), seed (40.7%) and pulp (77.00%). Leaves contained higher amount of Calcium (57.18%). However Aluminum (10.00%) and Magnesium (6.07%) were found only in leaves. The result of heavy metal (zinc, lead and cadmium) and analysis represented that flower, leaves, seed and pulp have zinc (Zn), lead (Pb) and cadmium (Cd) found in lower amount than permissible limit for human body. The results of phytochemical analysis showed that terpenoids and steroids were present in all parts of moringa. Alkaloids present only in seed. Flavonoid was present in flower and seed, saponins was present in leaves, and tannin was present in leaves and seed. The result of antibacterial activity of different types of sample (flower, leaves, seed and pulp) of moringa showed that salmonella typhii was effectively inhibited to all the extracts studied. But Escherichia coli were not inhibited by any extract. Methanolic extract of flower, leaves, seed and pulp were highly sensitive against the salmonella typhii bacteria

#### **Studies on Pouzolzia Zeylanica Benn (Family Prem Jose**

Caesalpinia pulcherrima flowers have excellent antibacterial property. The present study aims to evaluate the antibacterial property Caesalpinia pulcherrima flower extract against clinically isolated eye infection causing Staphylococcus aureus. The (MIC) minimum inhibitory concentration and (MBC) minimum bactericidal

concentration was found to be 200 µg/ml and 400 µg/ml. Antioxidant activity, spectroscopic and phytochemical analysis of the extract was also studied. This study concludes that Caesalpinia pulcherrima can be used as a potential natural remedy to treat eye infection.

#### *Antimicrobial Activity and Phytochemical Screening of Parthenium An*

Experimental Text Book on Phytochemical Analysis and Antimicrobial Activity of Mentha Piperita Ocimum species has been used as a traditional remedy for various ailments such as arthritis, bronchitis, cold, conjunctivitis, diarrhea, dysentery, and flatulence, as well as for healing wounds and lowering blood glucose level. These are characterized by variations in their morphology such as the shape, size and pigmentation of leaves, which cause differences in chemical composition and affect the commercial value of this genus. This book describes

phytochemical investigations of Ocimum species using LC-MS/MS instruments to study qualitative and quantitative variations of phytochemicals in different Ocimum species. Features: Collection of Ayurvedic features and scientific analytical and pharmacological evidence of most important medicinal plants of genus Ocimum. Chemical signatures for the identification of Ocimum species. Easy-to-use analytical procedure for quality control of plants of Ocimum species and its herbal products.

#### Phytochemical Investigation of the Flavonoids GRIN Verlag

The essential peel oil of Citrus limetta var. Mitha (Sweet lime) extracted by steam distillation was assessed for chemical constituents and antimicrobial activity. Gas chromatographic analysis identified 17 constituents among which Limonene (95.98 %) was found as major

component followed by camphene (1.79 %), while the remaining terpenes were less than 1%. The results of antimicrobial activity of essential oil tested by disc diffusion method, against different against bacteria and fungi showed that it exhibited maximum zone of inhibition against *Bacillus cereus* (31.0mm) and *Bacillus subtilis* (29mm) followed by *Staphylococcus aureus* (25.3mm), whereas the minimum zone of inhibition was shown by *Fusarium oxysporum* (11mm) after 48 hours of incubation at their respective temperature (37°C for bacteria and 25°C for fungi). The inhibition zones, measured after 48 hours and 96 hours, showed that it was active against all tested bacteria and fungi. The results of our study showed that essential oil of *Citrus limetta* var. Mitha peel can be an effective medicine against different pathogenic microbes.

*Pharmacological Evaluation of Extracts from Buxus Macowanii, Polygala Myrtifolia, Scilla Sp. and Xanthocercis Zambesiaca* Prem Jose

Medicinal plants are the focus of intense study, in particular whether their traditional uses are supported by real pharmacological effects, or merely based on folklore. *Piper capense* L.f. (Piperaceae) is used traditionally for the treatment of infectious diseases, and has the potential to be a source of novel antimicrobial compound(s). Crude solvent extracts (water, methanol, hexane and acetone) and sequentially extracted subfractions of the root-bark of *P. capense* were prepared, of which the hexane-soluble subfraction MsAsHs was identified as the most promising antimicrobial subfraction. Phytochemical analyses of the various extracts and subfractions using TLC with numerous mobile phases and compound selective visualising reagents revealed the

presence of quinones in all of the crude solvent extracts. Alkaloids, lipids/sterols/steroids, phenolic compounds and amino acids/peptides were detected in select subfractions. Gradient reverse phase HPLC analyses using 0.1% formic acid and methanol indicated three major peaks in MsAsHs. IR spectroscopy indicated that carbonyl and hydroxyl functional groups, and aromatic characteristics were present in the major compound present in MsAsHs. Further analysis using targeted LC-MS Q-TOF and quadrupole LC-MS/MS analyses indicated an empirical formula of C<sub>11</sub>H<sub>8</sub>O<sub>3</sub>. This formula was confirmed for the isolated compound by GC-MS (HP5-MS column) that identified the compound as 5-hydroxy-2-methyl-1,4-naphthoquinone (C<sub>11</sub>H<sub>8</sub>O<sub>3</sub> MW: 188.18) with 98% certainty using the database. Although 5-hydroxy-2-methyl-1,4-naphthoquinone (also known as plumbagin) is well-known, this is the first time that the presence of this compound is reported in the *Piper* genus. Antimicrobial activities of *P. capense* root-bark extracts and the subfractions were determined against Gram-negative and Gram-positive bacteria and a yeast strain using the disk diffusion and broth micro-dilution assays. Antimicrobial activity was observed against Gram-positive bacteria, Gramnegative bacteria as well as a yeast strain, indicating broad spectrum activity. The antimicrobial activities of the crude solvent extracts decreased in the order: acetone > methanol > hexane > water. The MsAsHs subfraction demonstrated the highest antimicrobial activity with an MIC of 29??g/ml against both *Staphylococcus aureus* (ATCC 12600) and *Candida albicans* (ATCC 10231). HPLC eluents of this subfraction that were collected in a drop-wise fashion

onto silica TLC plates and assayed by bioautography, indicated that the major compound eluting at 13.6 minutes accounted for most of the antimicrobial activity. Antioxidant activity was observed for the crude water extract, crude methanol extract, crude acetone extract, MsAsAs subfraction as well as the MsAsHs subfraction. Cytotoxicity against mammalian cells in culture was observed for the crude methanol extract, crude acetone extract, crude hexane extract and the MsAsHs subfraction when determined using C2C12 cells as well as resting and PHA stimulated lymphocytes. Stability testing of the MsAsHs subfraction revealed that the antimicrobial compounds found in this subfraction appear to be stable up to 30 days at both 25°C and 40°C when assayed against *S. aureus*. However, when assayed against *C. albicans*, there was an increase in antifungal activity from 29??g/ml to

**Biotechnology and Production of Anti-Cancer Compounds** LAP Lambert Academic Publishing

*Honey Analysis - New Advances and Challenges* discusses advances in honey research. Topics include the physicochemical characteristics of honey from stingless bees, the therapeutic properties of honey, melissopalynological analysis as an indicator of the botanical and geographical origin of honey, and methods for authenticating honey. Written by experts in the field, this book provides readers with an indispensable source of information, assisting them in future investigations of honey and beekeeping.

*Studies on antimicrobial, biochemical and image analysis in Mirabilis jalapa* LAP Lambert Academic Publishing  
Scientific Study from the year 2016 in

the subject Agrarian Studies, grade: 1.5, Mar Augusthinose College, language: English, abstract: This study aims at the attributes of the *Annona reticulata* and its medical and biological value. *Annona reticulata* belongs to the family Annonaceae, commonly known as honey apple. Qualitative phytochemical analysis of chloroform and water extracts of *Annona reticulata* fruit, leaf and stem bark was conducted in order to detect the presence of various secondary metabolites using standard procedures. The results of phytochemical screening indicated the presence of secondary metabolites such as tannins, betacyanins, carbohydrates, alkaloids, terpenoids, phenols, quinines, saponins, cardiac glycosides etc. Also the comparative antimicrobial activity of chloroform and water extracts of fruit, leaf and stem bark of *Annona reticulata* was evaluated against four bacterial species namely, *Escherichia coli*, *Pseudomonas aeruginosa*, *Serratia marcescens* and *Micrococcus luteus* and two fungal species namely *Candida albicans* and *Rhizopus*. Agar well diffusion method and disc diffusion method were selected to check the antimicrobial activities of the extracts. The study revealed that the chloroform extracts of leaf, stem bark and fruit of *Annona reticulata* has activity against the bacterial strains and fungal strains. Whereas, the water extracts of leaf, fruit and stem bark of *Annona reticulata* has more activity towards the fungal species. The findings of this study have identified that *Annona reticulata* extracts acts as a promising source of antimicrobial agent which could be useful in the modern medicine.

*Phytochemical Screening and the Evaluation of the Plant Senna Siamea* Amer Society for Microbiology



In the traditional system of medicine, the plant is being used as diuretic and anthelmintic, antidiabetic, expectorant and in the treatment of lithiasis. The plant is used for arresting haemorrhage during pregnancy, burn healing, as an anti-inflammatory, headache, skin diseases to dissolve kidney and gall bladder stones. Bacterial pathogens have evolved numerous defence mechanism against antimicrobial agents hence resistance to old and newly produced drugs is on the rise. The phenomenon of antibiotic resistance exhibited by the pathogenic minor has led to the need for screening of several medicinal plants for their potential antimicrobial activity. In the present study various extracts *Aerva lanata* were tested against pathogens of UTI & RTI (*Staphylococcus aureus*, *Pseudomonas* sp, *E. coli*, *Klebsiella* sp.) Among the organism tested *Staphylococcus aureus*, *E. coli* showed the maximum clear zone with Aqueous extract followed by the *Pseudomonas* sp, *Klebsiella* sp, phytochemical analysis revealed the presence of sterols, saponins, glycosides phenols and resins. The phytochemicals were separated by paper chromatography and identification based on Rf values. Antioxidant assay was also carried out and found to possess antioxidant potential. This study will aim the clinician to prescribe adequate treatment for urinary tract and respiratory tract infections.

**Wine Analysis** Anchor Academic Publishing (aap\_verlag)

For centuries medicinal plants have been used all over the world for the treatment and prevention of various ailments, particularly in developing countries where infectious diseases are endemic and modern health facilities and services are inadequate. In recent years the use

of and search for drugs derived from plants have been accelerated. Ethnopharmacologists, botanists, microbiologists, and natural-product chemists are trying to discover phytochemicals and leads' which could be developed for the treatment of infectious diseases. Plants are rich in a wide variety of secondary metabolites, such as tannins, terpenoids, alkaloids, and flavonoids, which have been found in vitro to have antimicrobial properties. The evaluation of these plants for biological activity is necessary, both to substantiate their use by communities, and also to discover possible new drug or herbal preparations. Twenty five plants selected through ethno-botanical surveys in Mozambique which are used to treat respiratory diseases, wounds, viruses, stomach ailments and etc., were collected and investigated for antimicrobial activity. Acetone extracts of selected plants were tested for antibacterial, antimycobacterial and anti-HIV-1 activity. Antibacterial activity was evaluated using the agar diffusion method. Five Gram positive (*Bacillus cereus*, *Bacillus pumilus*, *Bacillus subtilis*, *Staphylococcus aureus*, *Enterococcus faecalis*) and five Gram negative (*Enterobacter cloacae*, *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Serratia marcescens*) bacterial species were used in this study. The extracts of each plant were tested at concentrations ranging from 0.125 to 5.0 mg/ ml. Most of the plant extracts inhibited the growth of the Gram-positive microorganisms. The minimum inhibitory concentration of eight plants (*Cassia abbreviata*, *Elephantorrhiza elephantina*, *Hemizygia bracteosa*, *Hoslundia opposita*, *Momordica balsamina*, *Rhoicissus tomentosa* and *Salvadora australis*) against Gram-

positive bacteria was found to be 0.5 mg/ml. Gram-positive bacteria were found to be susceptible to extracts of *Lippia javanica* at concentration of 0.125 mg/ml. Among the 22 acetone extracts tested, two were found to have activity against Gram-negative bacteria at a concentration of 5.0 mg/ml (*Adenia gummifera* and *Momordica balsamina*). *Rhoicissus revoilli* inhibited *E. cloacae*, a Gram-negative strain, at a concentration of 2.5 mg/ml. To evaluate antimycobacterium activity ten plants species were tested against H37Rv, a drug-sensitive strain of *Mycobacterium tuberculosis* at concentrations ranging from 0.5 to 5.0 mg/ml using BACTEC radiometric method. Four of the plant species tested (*Cassia abbreviata*, *Hemizigya bracteosa*, *Lippia javanica* and *Melia azedarach*) were observed to be active against the H37Rv. (ATCC 27294) strain of TB at a concentration of 0.5 mg/ml which was the lowest concentration used in this study. Seventeen plant species, were screened for anti-HIV bioactivity in order to identify their ability to inhibit the enzymes glycohydrolase (? -glucosidase and? - glucuronidase) and eleven species were further tested against Reverse transcriptase. It was found that 8 plant species (*Cassia abbreviata*, *Elephantorrhiza elephantina*, *Rhoicissus tomentosa*, *Pseudolachnostylis maprouneifolia*, *Lippia javanica*, *Litogyne gariepina*, *Maerua juncea* and *Momordica balsamina*) showed inhibitory effects against? -glucosidase and? - glucuronidase at a concentration of 200? g/ml. The results of the tests revealed that the plant extracts of *Melia azedarach* and *Rhoicissus tomentosa* appeared to be active, showing 49 and 40% inhibition of the enzyme activity respectively. *Lippia javanica* was found

to have the best activity exhibiting a minimum inhibitory concentration of 0.125 mg/ml. The extracts also showed positive activity against *Mycobacterium tuberculosis* at concentration of 0.5 mg/ml and HIV-enzyme glycohydrolase was (? -glucosidase and? -glucuronidase) inhibited by 62 % and 73 % respectively. Considering its medicinal use local for HIV and various infections, it was therefore, selected for identifying its bioactive constituents. In the initial screening of plants used in Mozambique *Hoslundia opposita* demonstrated good antitubercular activity. It was therefore, selected to identify its bioactive constituents. A Phytochemical investigation of *L. javanica* led to the isolation of eight compounds, 4-ethyl-nonacosane (1), (E)-2(3)-tagetenone epoxide (2), myrcenone (3), piperitenone (4), apigenin (5), cirsimaritin (6), 6-methoxyluteolin 4'-methyl ether (7), 6-methoxyluteolin and 3',4',7-trimethyl ether (8). Three known compounds, 5,7-dimethoxy-6-methylflavone (9), hoslunddiol (10) and euscaphic acid (11) were isolated from *H. opposita*. This is the first report of compounds (1), (2), (5-8) from *L. javanica* and of compound (9) from *H. opposita*. The compounds were tested against *Mycobacterium tuberculosis* and HIV-1 reverse transcriptase for bioactivity. It was found that compounds (2), (4) and (9) inhibited the HIV-1 Reverse transcriptase enzyme by 91%, 53% and 52% respectively at 100? g/ml. Of all the compounds tested against a drug-sensitive strain of *Mycobacterium tuberculosis*, euscaphic acid (11) was found to exhibit a minimum inhibitory concentration of 50? g/ml against this strain. The present study has validated scientifically the traditional use of *L. javanica* and *H. opposita* and a few other Mozambican



medicinal plants to some extent. *Handbook of Arabian Medicinal Plants* LAP Lambert Academic Publishing  
The leaves of Nerium oleander have excellent antibacterial property. The present study aims to evaluate the cosmetic activity of Nerium oleander leaf extract against clinically isolated pimple causing Staphylococcus aureus. The minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) was found that dilution factor 200, and 300 respectively. Phytochemical analysis of the extract was also studied. This study concludes that Nerium oleander be used as a potential natural remedy to treat pimples.

*Honey Analysis* GRIN Verlag  
Research Paper from the year 2013 in the subject Chemistry - Bio-chemistry, grade: none, Madonna University Elele, Nigeria, course: Pharmaceutical and Medicinal Chemistry, language: English, abstract: The in vitro antimicrobial activity of crude methanol and aqueous extracts of the seeds of Bucholzia coriacea were investigated. The extracts exhibited antimicrobial activities against Escherichia coli, klebsiella pneumonia, Bacillus subtilis, Staphylococcus aureus, Salmonella typhii, Bacillus cereus and Pseudomonas aeruginosa. The minimum inhibitory concentration (MIC) of the ethanol extract was between 0.50 - 6.00 mgml<sup>-1</sup> while the minimum bactericidal concentration ranged from 2.0 - 10.0. The methanol and water extracts exhibited antifungal activity against Candida albicans and Aspergillus niger with zones of inhibition of 7.50 and 2.80mm for Candida albicans; and 6.0 and 2.0 for Aspergillus niger. Phytochemical screening revealed the presence of tannins, saponins, terpenoids, cardiac glycosides and alkaloids in the ethanolic and water

extracts. The ability of the ethanol extract of Bucholzia coriacea seeds to inhibit the growth of bacteria and fungi is an indication of its broad spectrum antimicrobial potential which justifies its utilization in traditional medicine in treatment of infections.

*STUDIES OF THE ANTIMICROBIAL ACTIVITY AND PHYTOCHEMICAL PROPERTIES OF BERBERIS LYCIUM*  
Lulu.com

This book discusses cancers and the resurgence of public interest in plant-based and herbal drugs. It also describes ways of obtaining anti-cancer drugs from plants and improving their production using biotechnological techniques. It presents methods such as cell culture, shoot and root culture, hairy root culture, purification of plant raw materials, genetic engineering, optimization of culture conditions as well as metabolic engineering with examples of successes like taxol, shikonin, ingenol mebutate and podophylotoxin. In addition, it describes the applications and limitations of large-scale production of anti-cancer compounds using biotechnological means. Lastly, it discusses future economical and eco-friendly strategies for obtaining anti-cancer compounds using biotechnology. *Phytochemical Investigation of Acacia Arabica and Its Antimicrobial Activity* LAP Lambert Academic Publishing  
Phytochemical investigation of leaves of Brownlowia tersa, a Shurb from Sundarbans (the largest Mangrove Forest of the World); indicated the presence of Reducing Sugars, Glycosides, Saponins, Tannins & Flavonoids types of compounds. The extract was assessed using brine shrimp lethality as an indicator of toxicity & showed significant level of toxicity (LC<sub>50</sub>=10ug/ml & LC<sub>90</sub>=86ug/ml). The antibacterial

activity of the extract was investigated, using disc diffusion method which showed antimicrobial activity against some gm(+) & gm(-) bacteria such as *Staphylococcus epidermidis*, *Vibrio cholerae*, *Streptococcus agalactiae*, *Shigella sonnei*, *Streptococcus pyogenes*, *Staphylococcus saprophyticus*, *Staphylococcus aureus* at the dose of 500ug/disc.

**Antimicrobial Activity of Brownlowia Tersa** Springer Science & Business Media

The present research was undertaken to investigate the antimicrobial activity of ethanol extract of *Pouzolzia zeylanica* (L.) Benn. (Family: Urticaceae) as well as to determine the phytochemical, cytotoxicity, antifungal activity of the extracts. In phytochemical screening, it was found that the ethanol extract contains alkaloids, glycosides, tannins and flavonoids. From the present study, it was found that the ethanol extract possesses significant cytotoxic activity with the LC50 value of 6.1 µg/ml and the LC90 value of 12.2µg/ml. The antibacterial activity of the ethanol extract were evaluated by disc diffusion method against 3 gram positive and 4 gram negative bacteria using amoxicillin as standard. The ethanol extract shows varying degrees of antibacterial activities with zone of inhibition ranging from 11.5-35.75 mm. The antifungal activity of the ethanol extract were evaluated by disc diffusion method against 6 fungi using griseofulvin as standard. The ethanol extract showed strong antifungal activity with zone of inhibition of 7-15 mm for 250µg/disc and 15-26 mm for 500 µg/disc respectively.

Phytochemical Analysis and Antimicrobial Activity of Piper Capensis L.f Springer

Medicinal plants have bioactive

compounds which are used for various human disease and also an important role in wound healing. The present study is to investigate about the Antimicrobial, phytochemical and antioxidant activity of *Eupatorium triplinerve* Vahl. The extracts are studied against human wound and burn pathogenic bacterial stains. *E. coli*, *Klebsiella* species, *Pseudomonas* species, *Staphylococcus aureus*, *Enterobacter* species. From the phytochemical study is shows the presence of steroids, glycosides, tannins, phenols, saponins and flavonoids. Plant extracts compounds were separated by thin layer chromatography and identification based on Rf values. The presence of vitamin C play and important role of antioxidants.

**Antimicrobial Activity of Compounds Isolated from Lippia Javanica (Burm.f.) Spreng and Hoslundia Opposita Against Mycobacterium Tuberculosis and HIV-1 Reverse Transcriptase** GRIN Verlag

The outbreak of drug resistant pathogens, the high cost of health care, limited accessibility of the conventional drugs and their side effects are problems that make the treatment of infectious diseases difficult all over the world. These challenges have led to the search for novel drugs and drug leads that can surpass the quality of the currently available antimicrobial agents. Medicinal plants are considered to be the best candidates for the discovery of new drugs because of their long history of use in the treatment of various ailments in communities. The current study was aimed at investigating the antimicrobial activity, cytotoxic activity and phytochemical composition of the methanol extracts from *Buxus macowanii*, *Polygala myrtifolia*, *Scilla* sp. and *Xanthocercis zambesiaca*.

Staphylococcus aureus, Clostridium perfringens, Pseudomonas aeruginosa, Enterococcus faecalis, Escherichia coli, Staphylococcus epidermidis, and the fungal species Candida albicans and Candida tropicalis were used to evaluate the antimicrobial activity of the selected plant extracts using the broth Microdilution method. All the plants extracts tested showed no activity against all the bacterial and fungal species except Buxus macowanii. Buxus macowanii inhibited the growth of Staphylococcus aureus, Clostridium perfringens, Pseudomonas aeruginosa, Staphylococcus epidermidis, Candida albicans and Candida tropicalis at the MIC of 2.5 mg/ml while Enterococcus faecalis and Escherichia coli were inhibited at 1.2 mg/ml. Buxus macowanii was selected for further studies because it presented the best antimicrobial properties. Antimicrobial compounds were located using TLC bioautography. Four clear zones possibly flavonoids and alkaloids were detected on the TLC chromatogram. These findings suggest that the antimicrobial activity of Buxus macowanii was not attributed to a single compound but to a synergy of compounds. The effect of Buxus macowanii on the bacterial cell morphology was also evaluated. Morphological changes such as damage to the cell wall, loss of intracellular contents, incomplete cell division and shrinkage of the cells were observed using Scanning and Transmission Electron Microscopy. Bacterial cells were affected morphologically after treatment with the extracts of B. macowanii. In order to evaluate the safety of the extracts used in the study, the Sulforhodamine cytotoxicity assay was carried out using the WI-38 cell line (Normal human fetal lung fibroblast). P.

myrtifolia was inactive against the WI-38 cell line whereas B. macowanii and X. zambesiaca were found to be moderately hazardous. Scilla extracts were found to be hazardous. These results indicate that caution should be exercised when employing plants like B. macowanii, X. zambesiaca and Scilla sp. for treatment of ailments. The phytochemical screening of B. macowanii, P. myrtifolia, Scilla and X. zambesiaca using standard methods, TLC and GCMS revealed compounds that have important health benefits. Bioactive compounds such as flavonoids, alkaloids, terpenes, cardiac glycosides, steroids, saponins and tannins were found in most of the extracts and their presence may explain the medicinal usage of the plants. GCMS also revealed compounds such as neophytadiene that was found in the extracts of Buxus macowanii, n-hexadecanoic was also found in the extracts of scilla sp and X. zambesiaca. 2-methoxy- 4-vinylphenol was found in the extracts of P. myrtifolia and X. zambesiaca. The results obtained in this study show that B. macowanii is a promising source of antimicrobial drugs. Further investigation into the isolation and identification of the bioactive compounds as well as in vivo screening is recommended.

*Phytochemical, antioxidant and antimicrobial activity of Aerva lanta against respiratory and urinary tract infection organisms* Springer Science & Business Media

Mirabilis jalapa Linn belongs to the family Nyctaginaceae and is a large herbaceous plant grown in gardens throughout India. Mirabilis jalapa Linn is widely used in conventional medicine in many parts of the world for the treatment of various diseases viz. virus inhibitory activity, anti-tumor activity,

etc. Very few reports are available on the architecture of pollen grains, image analysis, Antimicrobial activity, pharmacognostic and phytochemical nature of *Mirabilis jalapa* Linn. The present project contains the following objectives: 1. Staining of pollen grain and observation of meiotic stages. 2.

Phytochemical studies of 3 different colored plant varieties of *M.jalapa* by TLC. 3. Comparative Evaluation of Antimicrobial Activities of plant leaf Extract (3 different colored varieties) of *Mirabilis jalapa*. 4. Image analysis of data got by experimentation using software.

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