Isolation Screening And Identification Of Fungal

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HESS BANKS

Isolation, Identification and Characterization of Psychrophilic Microorganisms and Screening for Their Cold-active Hydrolytic Enzymes Springer Science & Business Media

The clinical microbiology laboratory is often a sentinel for the detection of drug resistant strains of microorganisms. Standardized protocols require continual scrutiny to detect emerging phenotypic resistance patterns. The timely notification of clinicians with susceptibility results can initiate the alteration of antimicrobial chemotherapy and improve patient care. It is vital that microbiology laboratories stay current with standard and emerging methods and have a solid understanding of their function in the war on infectious diseases. Antimicrobial Susceptibility Testing Protocols clearly defines the role of the clinical microbiology laboratory in integrated patient care and provides a comprehensive, up-to-date procedural manual that can be used by a wide variety of laboratorians. The authors provide a comprehensive, up-to-date procedural manual including protocols for bioassay methods and molecular methods for bacterial strain typing. Divided into three sections, the text begins by introducing basic susceptibility disciplines including disk diffusion, macro and microbroth dilution, agar dilution, and the gradient method. It

covers step-by-step protocols with an emphasis on optimizing the detection of resistant microorganisms. The second section describes specialized susceptibility protocols such as surveillance procedures for detection of antibiotic-resistant bacteria, serum bactericidal assays, time-kill curves, population analysis, and synergy testing. The final section is designed to be used as a reference resource. Chapters cover antibiotic development; design and use of an antibiogram; and the interactions of the clinical microbiology laboratory with the hospital pharmacy, and infectious disease and control. Unique in its scope, Antimicrobial Susceptibility Testing Protocols gives laboratory personnel an integrated resource for updated lab-based techniques and charts within the contextual role of clinical microbiology in modern medicine.

A Taxonomic Approach to the Selective Isolation, Identification and Screening of Streptomycetes from Soils Springer Science & Business Media

The material presented in this book deals with basic mechanisms of free radical reactions in autoxidation processes and anitoxidant suppression of autoxidation of foods, biochemical models and biologi cal systems. Autoxidation in foods and corresponding biological effects are usually approached separately although recent mechanistic developments in the biochemistry and free radical chemistry of per oxides and their precursors tend to bring these two fields closer. Apparent ability of

antioxidants in diets to reduce the inci dence of cancer has resulted in scrutiny of autoxidized products and their precursors as possibly toxic, mutagenic and carcinogenic agents. Mechanisms of any of these effects have been barely ad dressed. Yet we know now that free radicals, as esoteric as they were only a few decades ago, are being discovered in foods, biochem ical and biological systems and do play a role in the above-mentioned causalities. The purpose of the Workshop and the resulting book was to give a unifying approach towards study of beneficial and deleterious effects of autoxidation, based on rigorous scientific considerations. It is our hope that the material presented in this book will not only provide a review of the "state of the art" of autoxidation and anti oxidants, but also reflect the interaction which occurred during the Workshop between workers using model sytems, and food and biological systems.

Anthrax in Humans and Animals Springer Science & Business Media

The final step in the site identification process for the Basalt Waste Isolation Project is described. The candidate sites are identified. The site identification methodology is presented. The general objectives which must be met in selecting the final site are listed. Considerations used in the screening process are also listed. Summary tables of the guidelines used are included. (DMC).

Isolation screening and selection of Aspergillus niger cultures for citric acid fermentation Springer Science &

Business Media
The present book discusses the screening, isolation, identification and molecular characterization of thermophilic bacteria along with the production of important industrial enzymes. The plus point of this book is abundantly used images along with detailed protocols and compositions of all the reagents. This book will open new vistas to search for novel bacteria(s) present in soil which is still unexplored for their potential.

Screening, Isolation and Identification of Xylanolytic-degrading Bacteria from Sago Pith Waste Isolation, Screening and Identification of Mercury Resistant Bacteria from Mercury Contaminated SoilIsolation, Antimicrobial Screening and Identification of Actinomycetes from Mangrove Sediments of Tanjung Lumpur, Kuantan, PahangActinomycetes are renowned as a rich source of bioactive molecules. However, the commercially potent secondary metabolites from well-known actinomycetes are difficult to discover due to the practice of screening that is leading to rediscovery of known bioactive compounds, thereby, emphasizing the need to isolate undiscovered actinomycetes. Mangroves are highly productive ecosystem though less attention has been given into the diversity of actinomycetes present in mangrove sediment particularly in Malaysia. Therefore, the objectives of this study were to isolate, screen and identify antimicrobial producing actinomycetes from sediment samples in

Tanjung Lumpur mangrove. Sediments from five different sites at Tanjung Lumpur mangrove were collected and selectively pre-treated. The pretreated sediments were diluted and plated onto eight different selective media. Pretreatment of wet heat with seawater was the most effective method for the isolation of actinomycetes as it yielded a maximum of 105 isolates and IM7 was the most suitable medium for actinomycete isolation with highest percentage of recovery (31%). A total of 172 potential actinomycetes were isolated from all the media. Antimicrobial activities of the selected isolates were checked against 8 test microorganisms using primary and secondary screening. In primary screening, of 61 isolates, 43 isolates showed antimicrobial activities against one or more test microorganisms. Isolate IIUM B21 and IIUM B31 showed inhibitory activity against all the test microorganisms. They were found to have good activity against B. subtilis, S. pyogenes and C. albicans. Forty three actinomycete isolates showing positive antimicrobial activity in the primary screening were subjected to secondary screening assay. In this test, only 12 isolates showed antimicrobial activity at least to one test microorganisms. Twelve isolates were randomly selected for identification based on partial sequences of 16S rRNA gene. Eight isolates were found belong to the genus Streptomyces, 2 isolates belong to the genus Micromonospora and 2 isolates were identified as Rhodococcus species. A phylogenetic

tree was constructed. The 12 identified isolates showed different morphologies on the 8 selective media. These findings revealed the potential of mangrove sediment of Tanjung Lumpur as an important source of actinomycetes with biosynthetic capabilities which might be beneficial to pharmaceutical industries.Isolation, Screening for Bioactivities and Identification of Selected Endophyte Fungi by Sequencing of 18s RRNA/ITS GenesIsolation, Identification and Characterization of Psychrophilic Microorganisms and Screening for Their Cold-active Hydrolytic Enzymes
This book is designed to be a long term career reference. The chapters present modern procedures. This is a how-to-book with a difference. These chapters: - reveal the background information about working with salt loving organisms, - are loaded with information about how experiments are conducted under high salt, - provide information about analyses that work under these conditions and those that may not, - present a wide range of details from laboratory designs to equipment used and even to simple anecdotal hints that can only come from experience.
Microbiological training focuses largely on the growth, the handling and the study of the microbes associated with humans and animals. Yet the largest proportion of the Earth’s microbiota lives in saline environments such as the Oceans, saline deserts and terminal hypersaline environments. This need for salt can be intimidating for those

interested in entering the field or for those interested in understanding how such research is accomplished. HALOPHILIC BACTERIA Humana Social isolation and loneliness are serious yet underappreciated public health risks that affect a significant portion of the older adult population. Approximately one-quarter of community-dwelling Americans aged 65 and older are considered to be socially isolated, and a significant proportion of adults in the United States report feeling lonely. People who are 50 years of age or older are more likely to experience many of the risk factors that can cause or exacerbate social isolation or loneliness, such as living alone, the loss of family or friends, chronic illness, and sensory impairments. Over a life course, social isolation and loneliness may be episodic or chronic, depending upon an individual's circumstances and perceptions. A substantial body of evidence demonstrates that social isolation presents a major risk for premature mortality, comparable to other risk factors such as high blood pressure, smoking, or obesity. As older adults are particularly high-volume and high-frequency users of the health care system, there is an opportunity for health care professionals to identify, prevent, and mitigate the adverse health impacts of social isolation and loneliness in older adults. Social Isolation and Loneliness in Older Adults summarizes the evidence base and explores how social isolation and loneliness affect health and quality of life in adults aged

50 and older, particularly among low income, underserved, and vulnerable populations. This report makes recommendations specifically for clinical settings of health care to identify those who suffer the resultant negative health impacts of social isolation and loneliness and target interventions to improve their social conditions. Social Isolation and Loneliness in Older Adults considers clinical tools and methodologies, better education and training for the health care workforce, and dissemination and implementation that will be important for translating research into practice, especially as the evidence base for effective interventions continues to flourish.

Microbiology Laboratory Guidebook Prem Jose

In this volume, expert researchers in the field detail the most up-to-date methods commonly used to study and produce carotenoids. These include methods on the manipulation and metabolic engineering of carotenoid producing microalgae and bacteria, including Corynebacterium glutamicum, Rhodopseudomonas palustris and radio-tolerant bacteria; in addition to fungi, as the beta-carotene producing Blakeslea trispora and Mucor circinelloides or the lycopene producing Blakeslea trispora; and the heterobasidiomycetous yeast producing xanthophylls Xanthophyllomyces dendrorhous (Phaffia rhodozyma) and the engineered yeast Pichia pastoris. Additionally, three overview chapters on the advancement of Biotechnology and carotenoid

production are included. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and cutting-edge, Microbial Carotenoids: Methods and Protocols provides practical experimental laboratory procedures for a wide range of carotenoids producing microorganisms, aiming to ensure successful results in the further study of this vital field.

Site Identification Presentation World Health Organization

Providing comprehensive discussions of the physical and chemical properties, manufacture, and industrial uses of biosurfactants, this reference offers first-hand accounts of biosurfactant research of leading biotechnology laboratories. It introduces promising possible uses of biosurfactants in medicine, in environmental control, and for marine organisms. In contributions of more than 30 leading international experts, the text reviews the biosynthetic mechanisms for surfactants and their precursor molecules; explicates the biophysics of microbial surfactants and examines the production of immobilized biocatalysts, lipopeptides, and rhamnolipids. It also presents information on the economics of biosurfactants.

Azospirillum VI and Related Microorganisms Anshan Pub

The present study deal with the

isolation, screening and selection of Aspergillus niger cultures for citric acid fermentation. The organism was isolated from onion and garlic peels which were collected from local market. Pour plate method using Czapak Dos Agar medium was used for isolation. The agar plates were incubated at room temperature for 7 days. Maximum sporulation were obtained and then stored in a refrigerator at 4°C for maintenance and further screening for citric acid fermentation. The cultural conditions and nutritional requirements for citric acid production by the selected culture were optimized in 250 ml Erlenmeyer flasks by submerged mould culture technique prior to scale up studies in a stirred fermenter. Two types of fermentation were succeeded they are solid and submerged state fermentation. In solid state fermentation basal medium for citric acid production were prepared in 7 conical flasks of about 100 ml each containing 30 g of samples like wastes of apple, pineapple, carrot, beetroot, sugarcane, mosambi and grape and whereas in submerged state fermentation basal medium. The basal medium for citric acid production were prepared in 2 conical flask of about 100 ml each containing 15 ml of samples like date syrup and sugarcane juice were added in 2 conical flasks and 3.5 g of corn flour was also taken in separate flask containing the same amount of basal medium. These samples were then sterilized in an autoclave for 121°C for 15 lbs at 15 mins. These samples were cooled down and were inoculated with

Aspergillus niger isolates which were obtained from Czapak Dos Agar medium. These flasks were then kept for incubation at room temperature for further studies. This comparative study of citric acid production in various medium were studied at each intervals up to 14 days of incubation. Pineapple and date syrup have shown an extreme citric acid production when compared to other samples.

Production of Lactic Acid Bacteria Inoculum for Ensiling Corn Stover CRC Press

Methicillin-resistant Staphylococcus aureus (MRSA) emerged as a clinically relevant human pathogen more than 5 decades ago. The virulent bacterium was first detected in hospitals and other health care facilities where vulnerable hosts, frequent exposure to the selective pressure of intensive antimicrobial therapy, and the necessity for invasive procedures created a favorable environment for dissemination. MRSA emerged as an important cause of health care-acquired infections, particularly central line-associated bloodstream infection, ventilator-associated pneumonia, and surgical site infection. Despite the adoption of infection control measures, the incidence of MRSA infection at most hospitals in the United States (U.S.) steadily increased for many years, but is now decreasing. Routine clinical cultures may miss a large portion of patients who are silent carriers of these organisms and serve as reservoirs for further transmission. More aggressive measures

have been sought to check the spread of this particularly virulent pathogen. Active surveillance screening for MRSA is receiving greater attention for its potential value in identifying carriers of MRSA to prevent further transmission. To identify the population of colonized individuals, microbiological samples are obtained from at-risk patients even in the absence of signs or symptoms of infection. The screening strategy may use a testing modality with a rapid turnaround time (results available on the same day as the testing is performed, typically using polymerase chain reaction (PCR), intermediate turnaround time (results available next day to 2 days after testing performed) or longer turnaround time (results available greater than 2 days after testing performed, typically culture). Because screening alone is not expected to affect health outcomes, screening strategies may include screening with or without isolation and with or without attempted decolonization or eradication. By detecting the larger population of colonized individuals, at the very least conventional precautions (i.e., hand hygiene and contact isolation) can be implemented in a broader and timelier manner to interrupt horizontal transmission of MRSA. Detection of colonized patients also permits consideration of more aggressive interventions, including attempts at microbiological eradication or decolonization. A Comparative Effectiveness Review (CER) was prepared by the Blue Cross and Blue

Shield Association Technology Evaluation Center Evidence-based Practice Center (BCBSA TEC EPC) on Screening for Methicillin-Resistant Staphylococcus aureus (MRSA). The objective of the CER was to synthesize comparative studies that examined the benefits or harms of screening for MRSA carriage in the inpatient or outpatient settings.1 The review examined MRSA-screening strategies applied to all hospitalized or ambulatory patients (universal screening), as well as screening strategies applied to selected inpatient or outpatient populations (e.g., patients admitted to the intensive care unit (ICU), patients admitted for a surgical procedure, or patients at high-risk of MRSA colonization or infection such those on prolonged antibiotic therapy) and compared them to no screening or to screening of selected patient populations (targeted screening). The review evaluated MRSA-screening strategies with or without isolation and with or without attempted eradication/decolonization.

Part I. Isolation and Identification of Additional Quaternary Alkaloids from the Roots of Thalictrum Foliolosum DC (Ranunculaceae). Part II. Isolation and Structure Determination of Alancine, a New Alkaloid from the Stembark of Alangium Lamarckii Thw (Alangiaceae). Part III. Screening of Some Isoquinoline-derived Alkaloids for Potential Pharmacological Activity Using the Brine Shrimp (Artemia Salina) Bioassay

Frontiers Media SA

This fourth edition of the anthrax

guidelines encompasses a systematic review of the extensive new scientific literature and relevant publications up to end 2007 including all the new information that emerged in the 3-4 years after the anthrax letter events. This updated edition provides information on the disease and its importance, its etiology and ecology, and offers guidance on the detection, diagnostic, epidemiology, disinfection and decontamination, treatment and prophylaxis procedures, as well as control and surveillance processes for anthrax in humans and animals. With two rounds of a rigorous peer-review process, it is a relevant source of information for the management of anthrax in humans and animals.

Isolation, Screening and Identification of Mercury Resistant Bacteria from Mercury Contaminated Soil Springer Science & Business Media

This volume provides basic insight and protocols relating to endophytic microbes. Chapter are divided into five major sections detailing basic isolation, bioactive metabolites production. endophytism, isolation and identification of endophytes, bioactive potentials, and screening of metabolites. Authoritative and cutting-edge, Endophytic Microbes: Isolation, Identification, and Bioactive Potentials aims to provide comprehensive and accessible methods to undergraduate, graduate, and established scientist.

Antimicrobial Susceptibility Testing Protocols Academic Press

The microbial world has given us many

surprises including microbes that grow under extremely harsh conditions (122C at 40 MPa), novel metabolisms such as the uranium and perchlorate reduction, and novel chemicals that can be used to control diseases. We continually face new and difficult problems such as the need to transition to more carbon-neutral energy sources and to find eco-friendly chemicals and to find new drugs to treat disease. Will it be possible to tap into the seemingly limitless potential of microbial activity to solve our current and future problems?The answer to this question is probably yes. We are already looking to the microbial world to provide new energy sources, green chemicals to replace those made from petroleum, and new drugs to fight disease. To help us along these paths, we are deciphering how microorganisms interact with each other. We know that microbial populations interact and communicate with each other. The language that microbes use is chemical where small molecules are exchanged among different microbial cells. Sometimes, these chemicals suppress activities of competitors and could be used as antibiotics or may have other therapeutic uses. Other times, the chemicals stimulate complex responses in microbial populations such as fruiting body or biofilm formation. By understanding the conversation that microbes are having among themselves, e. g.

Manual of Techniques in Insect Pathology LAP Lambert Academic Publishing

Actinomycetes are renowned as a rich source of bioactive molecules. However, the commercially potent secondary metabolites from well-known actinomycetes are difficult to discover due to the practice of screening that is leading to rediscovery of known bioactive compounds, thereby, emphasizing the need to isolate undiscovered actinomycetes. Mangroves are highly productive ecosystem though less attention has been given into the diversity of actinomycetes present in mangrove sediment particularly in Malaysia. Therefore, the objectives of this study were to isolate, screen and identify antimicrobial producing actinomycetes from sediment samples in Tanjung Lumpur mangrove. Sediments from five different sites at Tanjung Lumpur mangrove were collected and selectively pre-treated. The pretreated sediments were diluted and plated onto eight different selective media. Pretreatment of wet heat with seawater was the most effective method for the isolation of actinomycetes as it yielded a maximum of 105 isolates and IM7 was the most suitable medium for actinomycete isolation with highest percentage of recovery (31%). A total of 172 potential actinomycetes were isolated from all the media. Antimicrobial activities of the selected isolates were checked against 8 test microorganisms using primary and secondary screening. In primary screening, of 61 isolates, 43 isolates showed antimicrobial activities against one or more test microorganisms. Isolate IIUM B21 and

IIUM B31 showed inhibitory activity against all the test microorganisms. They were found to have good activity against B. subtilis, S. pyogenes and C. albicans. Forty three actinomycete isolates showing positive antimicrobial activity in the primary screening were subjected to secondary screening assay. In this test, only 12 isolates showed antimicrobial activity at least to one test microorganisms. Twelve isolates were randomly selected for identification based on partial sequences of 16S rRNA gene. Eight isolates were found belong to the genus Streptomyces, 2 isolates belong to the genus Micromonospora and 2 isolates were identified as Rhodococcus species. A phylogenetic tree was constructed. The 12 identified isolates showed different morphologies on the 8 selective media. These findings revealed the potential of mangrove sediment of Tanjung Lumpur as an important source of actinomycetes with biosynthetic capabilities which might be beneficial to pharmaceutical industries.

Isolation, Identification and Genetics of Nylon6 Degrading P. Putida CRC PressI Llc

Biological Techniques is a series of volumes aimed at introducing to a wide audience the latest advances in methodology. The pitfalls and problems of new techniques are given due consideration, as are those small but vital details not always explicit in the methods sections of journal papers. In recent years, most biological laboratories have been invaded by computers and a wealth of new DNA

technology and this will be reflected in many of the titles appearing in the series. The books will be of value to advances researches and graduate students seeking to learn and apply new techniques, and will be useful to teachers of advanced undergraduate courses involving practical or project work. This manual describes the broad array of techniques that are used in insect pathology. It will provide biologists, insect pathologists, entomologists, and those interested in biological control, with the necessary information to work on a variety of pathogen groups. This book will be an essential laboratory reference for insect pathologists. Features include: * Step by-step instructions on how to isolate, identify, culture, bioassay and store the major groups of entomopathogens * Details of the practical knowledge needed by beginners to apply the techniques * Chapters written by an international group of experts * Discussion of safety testing of entomopathogens in mammals and also broader methods such as microscopy and molecular techniques * Provides extensive supplemental literature and recipes for media, fixatives and stains

Biosurfactants Humana

Introduction; Review of literature: Silage and factors affecting ensiling; Organisms for ensiling; Characteristics of a good inocula; Materials and methods: Isolation of lactic acid bacteria; Screening and identification of isolates; Screening of isolates for inoculant production; Inocula production usign corn stovers as

carriers; Silage production; Results and discussion; Conclusion and recommendation; literature cited; Appendix tables; Appendices.

Microbial Control of Weeds

Independently Published

In order to meet the increasing demand for food quality and safety, the control of pathogenic microorganisms from farms to consumers remains a continuous challenge. Disease has always been a critical issue in animal production, affecting animal health and wellbeing. For several decades, antibiotics and chemotherapeutic agents have been used in animal feed to treat and prevent infectious diseases or to promote growth. However, there are concerns about the risk of development of cross-resistance and multiple antibiotic resistance in pathogenic bacteria in both human and livestock. To slow the development of resistance, some countries have restricted or banned use of antibiotics in feeds. Therefore, the need to find alternatives to growth-promoting and prophylactic uses of antibiotics is of outmost importance in agriculture. Beneficial bacteria, mainly lactic acid bacteria have been effectively used previously as feed additives in livestock to manipulate the gut microbiota in order to support animal health. Therefore, the current study focused on isolation and characterisation of probiotic bacteria from raw goats milk. The first part of the study aimed at isolating and identifying potential probiotic bacteria. Bacteria from raw milk were cultured onto selective media

including, M17 agar and MRS agar supplemented with 0.05 g/L cysteine-hydrochloride. A total of seventeen lactic acid bacteria were isolated, and were then identified using phenotypic assays, 16S rDNA gene sequencing and matrix-assisted laser desorption ionization-time of flight (MALDI-TOF). Lactobacillus plantarum strains (KJ026587.1, KM207826.1, KC83663.1, and KJ958428.1) and Pediococcus acidalactici were obtained. Potential probiotic bacteria were identified based on their ability to survive in the gastrointestinal conditions that include growth at low pH and bile tolerance, production of antimicrobial compounds and adhesion to the intestinal mucosa.

Isolation, Screening for Bioactivities and Identification of Selected Endophyte Fungi by Sequencing of 18s RRNA/ITS Genes National Academies Press

Are you planning to record your travel mileage for work, trip purposes and personal expenses or just personal information? This is the perfect logbook that you need that is just very simple, handy and easy to use. This mileage logbook is an ideal tool for anyone who needs to track their vehicle or gas usage and it can also be used to keep a well-maintained log for tax reporting or deduction purposes the old-fashioned way. This simple record book will benefit business, private sectors and individuals since it will save you a lot of time and money. Grab one now!

Autoxidation in Food and Biological Systems Humana

Rapid developments in the chemical

industry have lead to the distribution of a wide variety of synthetic compounds into the environment. Synthetic polymers form the base for the more than 55% of all textile material with a worldwide fiber production of 3.3 million tones. Research on the microbial degradation of xenobiotic polymers has been underway for more than 40 years. It has exploited a new field not only in applied microbiology but also in environmental microbiology and has greatly contributed to polymer science by initiated the design of biodegradable polymers. According to important use of nylon, and because of limited studies of nylon biodegradation, this study was focused on: Isolation and identification of bacteria that capable of degrading nylon6. Screening the bacteria for their ability to degrade nylon6 and select the efficient isolate(s). Determine the plasmid(s) profile of the efficient isolate(s). Determine the role of plasmid(s) in nylon6 degradation process via curing and/or transformation experiments. Study some optimum conditions for nylon6 degradation by efficient isolates.

Isolation, Identification and Primary Screening for the Decomposition Ability of Mycorrhizal Fungi in Epiphytic Orchid, Dendrobium Crumenatum LAP Lambert Academic Publishing

It is appropriate at this time to reflect on two decades of research in biological control of weeds with fungal plant pathogens. Some remarkable events have occurred in the last 20 years that

represent a flurry of activity far beyond what could reasonably have been predicted. In 1969 a special topics review article by C. L. Wilson was published in Annual Reviews of Phytopathology that examined the literature and the potential for biological control of weeds with plant pathogens. In that same year, experiments were conducted in Arkansas that determined whether a fungal plant pathogen could reduce the infestation of a single weed species in rice fields. In Florida a project was under way to determine the potential use of a soil-borne plant pathogen as a means for controlling a single weed species in citrus groves.

Work in Australia was published that described experiments that sought to determine whether a pathogen could safely and deliberately be imported and released into a country to control a weed of agricultural importance. All three projects were successful in the sense that Puccinia chondrillina was released into Australia to control rush skeleton weed and was released later into the United States as well, and that Colletotrichum gloeosporioides f.sp. aeschynomene and Phytophthora palmivora were later both marketed for the specific purpose of controlling specific weed species.