Isolation Of Lactic Acid Bacteria From Fermented Milk

Lactic acid bacteria (LAB) are commonly found in traditional fermented milks as natural flora.

They play a great significant role in these products. During the last decades, several investigators have isolated and identified different LAB species from dairy products . All these studies were based on cultivation and phenotypic identification methods

(culture-dependent methods). These methods, which rely on bacterial growth in selective media, may fail to identify bacteria that cannot multiply outside the environment. Indeed, cultivation-dependent approaches may bias our view of microbial

diversity. In recent years, a great number of different molecular techniques have been developed for the identification of LAB. This book, therefor, a combination of culture-dependent methods [Apparatus and Procedure Identification system (API),

Sodium-Dodecyl Sulfate Polyacrylamide gel Electrophoresis (SDS-PAGE)] and culture-independent methods (Temporal Temperature Gradient Gel Electrophoresis (TTGE)were used to determine the lactic acid bacteria present in traditional

Kariesh cheese and Laban Rayeb. The diversity and functional characteristics of plant-associated lactic acid bacteria (LAB) are currently less well understood than that of LAB found in other environments. LAB naturally inhabit the surfaces of plants and

are responsible for the spontaneous fermentation of plant tissues. This thesis resulted in the identification of 204 LAB isolates from (sub)tropical plants. These bacteria were isolated from a total of 23 plant types and included a total of 23 different

LAB species, including members of the Carnobacterium, Enterococcus, Fructobacillus, Lactobacillus, Lactococcus, Leuconostoc, Streptococcus and Weissella genera. The most frequently isolated LAB was Lactobacillus florum with 75

isolated representatives from 17 plant varieties. The capacity of 18 isolates, encompassing 12 different LAB species, to produce erythritol and mannitol was examined during growth on laboratory culture media containing glucose or fructose or

a 1:1 mixture of those sugars as primary carbon sources for growth. Isolates of Lactobacillus florum, Fructobacillus sp., Lactococcus garvieae, Leuconostoc citreum, Leuconostoc pseudomesenteroides, Weissella

confusa and Weissella paramesenteroides were able to produce erythritol and/or mannitol in at least one of the five laboratory media tested. L. florum 2F, a strain isolated from Valencia orange leaves, was further characterized for

metabolic and genetic characteristics. L. florum 2F produced mannitol at an efficiency of 0.53 mol mannitol per mol fructose in culture medium and 0.46 mol mannitol per mol sugar when grown in culture medium containing

equivalent amounts of fructose and glucose. This strain also produced erythritol at an efficiency of 0.33 mol erythritol per mol glucose, 0.094 mol erythritol per mol fructose and 0.015 mol erythritol per mol sugar from culture medium

containing equivalent amounts of fructose and glucose. L. florum 2F exhibited both erythrose reductase and erythritol 4-phosphate dehydrogenase activity, enzymes involved in erythritol production in yeast and Oenooccus oeni, respectively. L.

florum and other plant-associated LAB possess traits that are relevant to the control and improvement of plant fermentations.

Isolation, identification and antimicrobial activity of lactic acid bacteria from traditional

fermented milk from northern Namibia
Isolation and Identification of Lactic Acid Bacteria from Australian Wines
Isolation, Identification and Exploitation of Lactic Acid Bacteria from Human and Animal

Microbiota
Interactions Between Diets, Gut Microbiota and Host Metabolism
Isolation of Glutamic Acid-producing Lactic Acid Bacteria and Its Application in Thosai
Lactic acid bacteria (LAB)

occur naturally in meat. These bacteria produce antimicrobial substances such as bacteriocin. The present study is focused on isolation of LAB from meat. Bacteriocin is extracted from the isolated

Lactococcus lactis and the antibacterial activity is evaluated against bacterial pathogens (E. coli and S. gallinarum) of poultry origin. The antimicrobial properties varies when different

parameters are applied. The antimicrobial properties changes with the change in the pH, temperature, change in the concentration of ethanol, methanol, chloroform and SDS. When bacteriocin is

treated with enzyme, it does not show any activity. The minimum inhibitory concentration (MIC) is also measured. This book shows the potential application of lactic acid bacteria in the

poultry industry to protect the flocks against potential pathogens.
This detailed book provides a collection of protocols for numerous experimental approaches perfected by the

authors for lactic acid bacteria (LAB) research. Split in to three parts, the volume delves into the identification and metabolism of LABs, the applications of the bacteria for the food industry, as well as

healthy functions of LAB. Written for the highly successful Methods in Molecular Biology series, chapters include introduction to their respective topics, lists of the necessary materials

and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and accessible, Lactic Acid Bacteria: Methods

and Protocols serves as an ideal inspiration for many research efforts in the domains of food science and health science.

Isolation, Screening and Characterisation of Lactic

Acid Bacteria Isolated from Local Food Sources Isolation, Identification and Characterisation of the Predominant Lactic Acid Bacteria Involved in Cider Fermentation

Screening, Isolation and Characterisation of Antimicrobial/antifungal Peptides Produced by Lactic Acid Bacteria Isolated from Wine

Biodiversity and Taxonomy

Isolation of lactic acid bacteria causing ropiness of white cheese brine

Through four editions, Lactic Acid Bacteria: Microbiological and Functional Aspects, has provided readers with

information on the how's and why's lactic acid-producing fermentation improves the storability, palatability, and nutritive value of perishable foods. Thoroughly updated and fully revised, with 12 new

chapters, the Fifth Edition covers regulatory aspects globally, new findings on health effects, properties and stability of LAB as well as production of target specific LAB. The new edition also addresses the technological

use of LAB in various fermentations of food, feed and beverage, and their safety considerations. It features the detailed description of the main genera of LAB as well as such novel bacteria as fructophilic LAB

and novel probiotics and discusses such new targets as cognitive function, metabolic health, respiratory health and probiotics. Key Features: In 12 new chapters, findings are presented on health effects, properties and stability of

LAB as well as production of target specific LAB Covers such novel bacteria as fructophilic LAB and novel probiotics Presents new discoveries related to the mechanisms of lactic acid bacterial metabolism and function

Covers the benefits of LAB, both in fermentation of dairy, cereal, meat, vegetable and silage, and their health benefits on humans and animals Discusses the less-known role of LAB as food spoilers Covers the global

regulatory framework related to safety and efficacy

Specially selected starter cultures are required for the industrial production of cheese. These starter cultures are mainly composed of lactic acid bacteria

(LAB). StarterLAB have many functions in cheese production. They produce lactic acid during the fermentation process and provide formation of the curd. Futhermore, they show proteolytic activity and also they play a role

in the production of aroma compounds and antimicrobial substances. In order to prevent loss of LAB biodiversity and loss of traditional cheese diversity, it is important to identify novel LAB from traditional cheese.The aim

of this project was to isolate and identify natural LAB flora involved in traditional "Çömlek Peyniri" fermentation. In order to achive this goal, LAB were isolated and characterized by using phenotypic (cell

morphology, Gram staining, physiological and biochemical tests) and genotypic methods (PCR- Restriction Fragment Length Polymorphism). Moreover, technological characterization was performed

by monitoring the acid production profiles of the isolates.At the end of the study, a total of 113 coccal and 21 mesophilic lactobacilli were obtained and maintained for future use. It was found that cocci shaped isolates included 54

lactococci and 59 enterecocci. Further identification at the species level indicated that all of the lactococci isolates were L. lactis ssp. lactis. Thirty of the enterecocci were E. faecium, 8 of them were E. faecalis , 3 of them

were E. avium, 2 of them were E. durans and 16 of them were other Enterococcus ssp. Lactobacilli isolates were identified as Lb. paracasei ssp. paracasei (3 isolate), Lb. casei (3 isolate) and other Lactobacillus spp (15

isolate) . PCR-RFLP method which is based on the amplification of 16S rRNA- ITS genes and restriction digestion with HaeIII and TaqI endonucleases was found to be useful for further identification.

Finally, acid production profiles of isolates indicated that 35 of the isolates could lower the pH of UHT skim milk below 5.3 for 6 h incubation at 30 ‘C and these isolates were therefore the best starter candidates for industrial

applications.

Isolation and Characterization of Lactic Acid Bacteria from (sub)tropical Plants for Erythritol and Mannitol Production

Isolation of Bacteriocin Producing Lactic Acid Bacteria from

Chilled, Vacuum Packed Temperate and Tropical Fish Products

Antimicrobial Potential of Lactic Acid Bacteria Isolated from Meat

Lactic Acid Bacteria

Isolation of Lactic Acid Bacteria

and Amylolytic Lactic Acid Bacteria from Suitable Sources

Microorganisms participate in both the manufacture and spoilage of foodstuffs. In Food Microbiology Protocols, expert laboratorians present

a wide ranging set of detailed techniques for investigating the nature, products, and extent of these important microorganisms. The methods cover pathogenic organisms that cause spoilage,

microorganisms in fermented foods, and microorganisms producing metabolites that affect the flavor or nutritive value of foods. Included in the section dealing with fermented foods are procedures for the

maintenance of lactic acid bacteria, the isolation of plasmid and genomic DNA from species Lactobacillus, and the determination of proteolytic activity of lactic acid bacteria. A substantial number of

chapters are devoted to yeasts, their use in food and beverage production, and techniques for improving industrially important strains. There are also techniques for the conventional and molecular

identification of spoilage organisms and pathogens, particularly bacteria, yeasts, and the molds that cause the degradation of poultry products. Each method is described step-by-step for assured results,

and includes tips on avoiding pitfalls or developing extensions for new systems.. Comprehensive and timely, Food Microbiology Protocols is a gold-standard collection of readily reproducible

techniques essential for the study of the wide variety of microorganisms involved in food production, quality, storage, and preservation today.
Traditional fermented food, especially fermented maize

and sorghum represents an important part of the diet of peri-urban and rural communities in South Africa. In this study a survey was conducted to determine the popularity and utilization of Ting in the Limpopo

Province of South Africa. The following areas were selected for the study: Venda, Giyani, Bolobedu and Polokwane. Ting samples were collected from different areas and from different local families. Gram

positive, catalase-negative, oxidase negative, non-motile cells were presumptively identified as lactobacilli. Isolates were assigned to a genus on the basis of key characteristics. Growth at 10, 15 and 45oC in MRS broth

wase evaluated visually after 72h of incubation. Tests for the catalase reaction, production of gas from glucose and growth at 7 and 10% NaCl concentrations were performed. API 50CHL medium and API 50CH strips

were used to identify all the isolates to species level. Microorganisms from Ting fermented from both sorghum and maize were bacteria, which belong to the genus Lactobacillus, Leuconostoc and Pediococcus.

Lactobacillus pentosaceus, and Lactobacillus plantarum, Lactobacillus pentosaceus were dominant in the fermentation of maize, while Lactobacillus cellobisus, Leuconostoc mesenteroides, Lactobacillus collinoides,

Lactobacillus brevis, Lactobacillus fermentum and Lactobacillus curvatus were identified as bacteria from fermented Ting sorghum. The use of polyacrylamide gel electrophoresis (PAGE) of total soluble proteins,

together with computer analysis was used to analyse the resultant protein profiles. L. plantarum, L. pentosus and P. pediococcus were the most dominant isolates.

Emerging Frontiers in the

Formation of Viable but Non-Culturable Microorganisms and Biofilms During Food Processing
Isolation and Identification of Lactic Acid Bacteria from Laban Rayeb and Kariesh Cheese

Isolation and Characterization of Bacteriocin-producing Lactic Acid Bacteria
Isolation and Molecular Characterization of Lactic Acid Bacteria from Cheese
Bacteriocins of Lactic Acid

Bacteria
Whose habitat is this?
What are their geno-,
pheno- and ecotypes? These
fervent questions in
gastrointestinal
microbiology are still,

for the most part, unanswered when it comes to what decisively influences pig host nutrition and health: the individual bacterial species of the porcine

mucosal gastric and small intestinal microbiota. Lactic acid-producing bacteria in syntrophism with lactic acid-fermenting bacteria, i.e. communities of 'lactic

acid-related bacteria' (LARB), constitute the predominant and generally most beneficial part of this microbiota. The present book gives answers to the aforesaid

questions. Outlined in six major chapters, the book starts off by reviewing the microecology of the pig proximal gastrointestinal tract as well as the different

groups of LARB (chapter II). This leads over to the methodological chapters III and IV which explain the application of two newly developed culture-based approaches

for isolation of novel species of manganese catalase-positive lactobacilli and mucin-fermenting LARB. Chapters V and VI contain the valid taxonomic descriptions of

two novel LARB species, namely Olsenella umbonata Kraatz et al. 2011 and Veillonella magna Kraatz and Taras 2008 from porcine mucosal jejunum. Chapter VIII ends the book

with a discussion of the ecological status, niches and host relationship of O. umbonata and V. magna, thus taking the reader back to the microecology of chapter II.

The lactic acid bacteria (LAB) are a group of relatedmicro-organisms that are enormously important in the food and beverage industries. Generally regarded as safe

for humanconsumption (and, in the case of probiotics, positively beneficialto human health), the LAB have been used for centuries, andcontinue to be used worldwide on an

industrial scale, in foodfermentation processes, including yoghurt, cheeses, fermented meatsand vegetables, where they ferment carbohydrates in

the foods,producing lactic acid and creating an environment unsuitable forfood spoilage organisms and pathogens to survive. The shelf life ofthe product is thereby

extended, but of course these foods are alsoenjoyed around the world for their organoleptic qualities. They are also important to the brewing and winemaking

industries,where they are often undesirable intruders but can in specificcases have desirable benefits. The LAB are also used in producingsilage and other

agricultural animal feeds. Clinically, theycan improve the digestive health of young animals, and also havehuman medical applications. This book provides a much-needed and

comprehensive account ofthe current knowledge of the lactic acid bacteria, covering thetaxonomy and relevant biochemistry, physiology and molecularbiology of these

scientifically and commercially importantmicro-organisms. It is directed to bringing together the currentunderstanding concerning the organisms’

remarkable diversitywithin a seemingly rather constrained compass. The genera now identified as proper members of the LAB aretreated in dedicated chapters, and the species

properly recognized as members of each genus arelisted with detailed descriptions of their principalcharacteristics. Each genus and species is described using

astandardized format, and the relative importance of each species infood, agricultural and medical applications is assessed. Inaddition, certain other bacterial groups (such

asBifidobacterium) often associated with the LAB are givenin-depth coverage. The book will also contribute to a betterunderstanding and appreciation of the role

of LAB in the variousecological ecosystems and niches that they occupy. Insummary, this volume gathers together information designed toenable the

organisms’ fullest industrial, nutritional andmedical applications. Lactic Acid Bacteria: Biodiversity and Taxonomy is anessential reference for research scientists,

biochemists andmicrobiologists working in the food and fermentation industries andin research institutions. Advanced students of food science

andtechnology will also find it an indispensable guide to thesubject.
Their Isolation, Characterization and Application in Food Systems

Enumeration, Isolation, Identification and Probiotic Characterisation of Lactic Acid Bacteria from Nigerian Human Breast Milk
Isolation and

Characterization of Bacteriocin and Lactic Acid Bacteria Isolated from Food Samples in Jamaica
Isolation and Molecular-identification of Lactic

Acid Bacteria from Traditional Mongolian Fermented Milk Products Microbiological and Functional Aspects, Fifth Edition

Did you know? It's estimated

that fermentation practices have been around since as early as 6000 BC, when wine was first being made in Caucasus and Mesopotamia. Today, there are roughly 5000 varieties of fermented foods

and beverages prepared and consumed worldwide, which accounts for between five and forty percent of daily meals. Fermented Foods a
Lactic acid bacteria are industrially important because

they are used as starter cultures in food production, they produce antimicrobial compounds and they are used in the formulation of probiotic products. Several dairy products such as raw milk,

traditionally fermented cheese (produced without the use of commercial starter cultures), and kefir which are produced in country are good sources of novel lactic acid bacterial strains. These lactic acid

bacterial strains may have potential for the production of new fermented dairy products with characteristic aroma and flavour. Therefore, the isolation of lactic acid bacteria from natural products and

their identification are important. For many years, several phenotypic methods have been used to identify lactic acid bacteria, but they are not often capable of effectively differentiating

subspecies and strains within a genus. New methods based on the genotypic properties have been developed and used for the proper classification of bacteria The aim of this research was the

isolation of lactic acid bacteria from raw milk and the identification of the lactic acid bacterial isolates by biochemical tests, polymerase chain reaction (PCR)-based methods and pulsed field gel

electrophoresis (PFGE). Lactic acid bacteria were isolated from cow.s raw milk and identified by biochemical reactions. Two PCR based methods, ITS-PCR (Internal Transcribed Spacer-PCR) and

PCR-RFLP (PCR- Restriction Fragment Length Polymorphism) were then used for the differentiation of reference strains of lactic acid bacteria. PCR-RFLP method, based on the amplification and

restriction digestion of 16S rRNA gene, was found to be useful for the identification. Thirteen raw milk isolates were identified as Lactococcus lactis, 24 as Enterococcus spp., and 2 as

Lactococcus lactis subsp. cremoris by PCR-RFLP method. Pulsed field gel electrophoresis was also optimized for the identification of reference strains. Restriction profiles obtained

by digesting the genomic DNA with Sma I enabled differentiation of the reference strains of Lactococcus, Enterococcus, and Streptococcus thermophilus. Isolation And Molecular

Characterization Of Lactic Acid Bacteria From Raw Milk Isolation and Antimicrobial Potency of Indigenous Lactic Acid Bacteria Isolated from Dadih, a Traditional Fermented Bufallo [sic] Milk from

Indonesia
Isolation and Characterization of Lipolytic Enzymes from Lactic Acid Bacteria in Relation to Flavour Development in Fermented Sausages ;Reaction Between

H2O2-activated Myoglobin and Other Proteins
Isolation of Lactic Acid Related Bacteria from the Pig Mucosal Proximal Gastrointestinal Tract, Including Olsenella Umbonata

Sp. Nov. and Veillonella Magna Sp. Nov

Screening and Isolation of Lactic Acid Bacteria to Produce Lactic Acid at High Concentration

Bacteriocins produced by three strains

of Carnobacterium piscicola and by a Lactobacillus sake strain were isolated, partially characterized and purified to homogeneity. These were termed carnocin 124, carnocin 109, carnocin 75 and sakacin 38. The synthesis of all four antimicrobials was shown to be inducible by extracellular

peptides, which were specific, controlling the production of both the bacteriocins and their cognate immunity proteins. Amino acid sequence analysis of the purified bacteriocins indicated that carnocins 75, 109, and 124 were homologous to piscicolin JG126 (also described as

piscicocin V1a) while sakacin 38 showed homology to sakacin P. The locus of carnocin 75 was cloned from C. piscicola NFBC75 and the amino acid sequence of the putative bacteriocin-inducing peptide and immunity protein were determined by translation of their genetic

determinants. In addition, enterocin 37 produced by Enterococcus faecalis NFBC37 was shown to be identical to enterocin AS48 by amino acid sequence analysis and mass spectroscopy of the purified peptide. Curing and Southern hybridization analysis showed the enterocin 37

operon to be associated with a 60 Kb plasmid in E. faecalis NFBC37. The plasmid was transferred by conjugation into E. faecalis JH2SS, conferring both bacteriocin production and immunity to the recipient strain. It was observed that the level and rate of enterocin 37 production was

determined by the pH of the growth media. Also the production of enterocin 37 shown to be affected at a transcriptional level on the basis of sugar utilization in both the wild type and transconjugant strains. The bacteriocin carnocin 124 was evaluated as a means of preservation

in fresh pork sausage, where it could allow for the reduction or replacement of sulfites currently employed in the product. The bacteriocin producing culture was used to ferment a milk based growth medium to produce a buttermilk-like product which was pasteurized, condensed and spray

dried to yield a fermented milk powder. The resultant powder was subsequently incorporated into fresh pork sausage. The inclusion of the fermented ingredient did not result in an increase in the shelf-life of the product; however, it was shown to be effective against Listeria for the

duration of the trial, reducing the levels by 99.9% from initial valued of 5.5 x 105 to approximately 5 x 102 CFU/g. Chitosan glutamate was also added to the product formations. Under chilled conditions its inclusion resulted in a 10-fold decrease in the total microbial load compared with the control for the

first 10 days of the trial indicating its potential as a natural preservative at chilled temperatures.

Isolation and Characterization of Lactic Acid Bacteria from Fermented Foods

Isolation and Characterization of Lactic Acid Bacteria from Gastrointestinal Tract of Snakehead (channa Striatus,

Bloch) as Probiotic for Freshwater Fish Indigenous Lactic Acid Bacteria from Camel Milk:isolation, Characterization and Application in Dairy Products Isolation and Characterization of Lactic Acid Bacteria from "ting" in the Northern Province of South Africa Isolation of Lactic Acid Bacteria from

Ducks and Geese for Probiotic Adjuncts