

Research works 2015-2016, 2016-2017 :

Physiological Properties From Probiotic *Saccharomyces boulardii* that isolates from Mangosteen fruits and diagnosed molecularly. *Euphrates Journal of Agriculture Science* Volume: 7 Issue: 1 Pages: 184-195

Abstract

This study was conducted in to isolate *Saccharomyces boulardii* from Mangosteen fruits and diagnosed molecularly by using specific primers targeting sequence for the region (ITS) of the 5.8S rRNA gene. As well as studied growth at different temperatures, resist to low pH and high concentrations of bile salts. The results shown that colonies were with a round shape and colored white to creamy pale when grown at the solid SD medium. They were convex smooth edges, sticky and averaged size of 1-2 mm when grown at 37 °C for 24 hours. Microscopic examine revealed that their cells an oval, or semi-spherical buds sometimes, single or close in clusters, and the optimum temperature for growth was 37 °C. The isolate shown resistance to low pH (1.0) up to 3 hrs, tolerance to high concentrations of bile salts (3%) even after 3 hrs. Genomic DNA was isolated from *SbR7* Isolate and ITS region of the 5.8S rRNA gene was amplified using PCR. PCR products was sequenced and compared with the sequence of this region in the DNA of *S. boulardii* available in GenBank (NCBI) using the program BLASTn. Results revealed, this isolate was almost genetically identical (99%) with *S. boulardii* standard strains.

Genetic Improvement of Saccharomyces boulardii R7 and Generate Suitable Strains for Synthesis and Expression of Recombinant Products. British Biotechnology Journal . Volume: 11 Issue: 2 Pages: 1-9.

Abstract:

Saccharomyces boulardii R7 was mutagenized using UV radiation. Uracil auxotroph mutants were isolated and four of these mutants showed stable mutation. Two mutants *SbR7M7* and *SbR7M10* were chose for transformation according to their similar behavior with wild type (*SbR7*) isolate. The two mutants (*SbR7M7* and *SbR7M10*) were transformed with pYES2, which was extracted from *Escherichia coli* Top10, and two transformants (*SbR7T7*, *SbR7T10*) obtained. The transformation was confirmed by isolating the plasmid (pYES2) from these transformants and used to transform *E. coli* Top10 (free of plasmid). Some probiotic properties were studied for the two transformants (*SbR7T7*, *SbR7T10*) compared with *SbR7*. They showed a noticed improvement in autoaggregation ability, an improvement of antagonistic activity toward *E. coli*: O157:H7 and *Candida albicans* and they reduced cholesterol ratio after 24 hr of incubation, however, the ratio increased after 48 hr of incubation.

The effect of active, resting, dead cells and cell free extract for same lactic acid bacteria in reducing cholesterol and microbial load for camel hump tissue, Journal Bial. Chem. Environ. Sci. 2016 Vol. 11(2):147-158.

Abstract:

Some of chemical composition for camel hump tissue were measured "moisture, fat, protein and ash. The results were "84.44, 84.09, 3.02 & 1.13"% respectively. While the cholesterol level, peroxide value, pH were "170.12 mg/100gm fat, 2.93 ml meq O₂/kg fat and 6.17, respectively. Amount of 10% inoculums of active resting and dead bacteria "which killed by using slow pasteurization at 63°C for 30 minute" & cell free extract (CFE), four lactic acid bacteria (*Lactobacillus casei*, *Lactobacillus delbrueckii spp bulgaricus*, *Lactobacillus acidophilus* & *Bifidusactiregularis*) were added to camel hump tissue & incubated at 37°C for 48 hours. The results showed a decreasing in cholesterol level between 30.07– 58.37 % for the active bacteria, *Lb. casei* was the most efficient. For the remaining cell treatments the decreasing percentages were between 16.81 - 30.43% and for the CFE treatments the decreasing percentages were between 18.62 – 29.54 % *Lb. acidophilus* was the best, while the decreasing in cholesterol level for the dead bacteria treatments was between 18.62– 29.54 %, *Lb. bulgaricus* was the most effective. The same treatments also showed a high efficiency in reducing total coliform, lipolytic bacteria, yeasts and molds as the microbial load indicators in the camel fatty tissue, *Lb. acidophilus* and *Lb. bulgaricus* were the best among the other bacteria. It could be concluded that *Lb. casei* was the most efficient in decreasing in cholesterol level of camel hump tissue than other lactic acid bacteria, while *Lb. acidophilus* and *Lb. bulgaricus* were the best among the other bacteria as the microbial load indicators in the camel fatty tissue.

Effective dosage of The probiotics *Saccharomyces. boulardii* and *Lactobacillus. planetarium* on lipids profile levels of Rabbits. Magazine of Al-Kufa University for Biology Online ISSN: 2311-6544 Pages: 1-7

Abstract

This study was designed to evaluate the oral dosage probiotics *Saccharomyces. boulardii* and *Lactobacillus. Planetarium*, on Rabbits lipids profile which contain total cholesterol, triglycerides ,LDLs, HDLs and VLDLs in Rabbits bloods. The rabbits were divided into four treatments Each subjected as the followings : treatment A; used as a negative control. treatment B; sub divided into four groups: group1 used as a positive control and other three groups were oral dosage with $100\mu\text{l}/100\text{gm wight/day}$ with *S. boulardii*, *S. boulardii* & *Lb. Planetarium* and *Lb. Planetarium*. treatments C and D, the dose used was 200 and $300\mu\text{l}/100\text{gm wight/day}$. The results showed declined the total Cholesterol, triglyceride and low density lipoprotein (LDLs) and very low-density lipoprotein (VLDLs) in treated rabbits as compared with control and increasing in the HDL levels. The study showed that treatment dosage with $300\mu\text{l}/100\text{gm wight/day}$ was the best in lowered the total cholesterol which reached 58.83 mg/100dl, triglyceride 71.12 mg/100dl, low density lipids (LDLs) 4.79 mg/100dl and very low-density lipoprotein (VLDLs) 14.22 mg/100dl and increase the HDL levels to 39.82 mg/100dl comparing with other treatments and control which was 71.34 ,114.74,19.34,22.95 and 30.01 mg/100dl respectively.

In vitro Evaluation of Antimicrobial Activities of the Filtrate product of milk of the camel *Mirror of Research in Veterinary Sciences and Animals (MRVSA)* <http://mrvsa.com/> ISSN 2307-8073 Pages: 39-47.

Abstract

This study was designed to examine the antimicrobial activity of unfiltered and filtered fresh camel's urine on the pathogenic bacteria and yeasts in vitro. The camel's urine samples were collected from a 4-5 years she camels (*Camelus dromedaries*) raised in local farm (sample 1) and from Western Desert of Samawa (sample 2) .The physical properties of the samples were analyzed . colures were yellow in the tow samples , and been dark with stored . The pH of both urine samples were ranging between ٧.٦٢ and ٧.٨٤ Respectively. Urine smell distinguish the smell of herbs stored (straw and hay) to sample 1, and the smell of hay appeared (sweet straw) for sample 2 as a result of the different nutrition

Escherichia coli O157:H7, *Pseudomonas aeruginosa*, *Enterococcus faecalis* , *Staphylococcus aureus*, *Klebsiella spp*, *Bacillus subtilis*, *Salmonella typhimurium* , *Clostridium spp*. and *Candida albicans* were used as pathogenic microorganisms to evaluate the antimicrobial activity of unfiltered and filtered fresh camel's urine. camel's urine

were revealed different inhibition zone on all pathogenic bacteria and yeasts. The diameters of inhibition zones of sample (1) for unfiltered camels urine were reached(20, 21, 15, ٠, 21,17, 18, 21, 19) mm Respectively, and for filtered (16, 12, 10, 0, 12, 11, 12, 16, 13) mm Respectively. Also The diameters of inhibition zones of sample (2) for unfiltered camels urine were reached(25, 24, 23, 16, 24, 19, 21, 23, 22) mm Respectively, and for filtered (22, 18, 17, 11, 20, 14, 16, 20, 17) mm Respectively. The results had shown also that the antimicrobial of unfiltered urine samples was better than the filtered , also the Desert camels urine sample (sample 2)was better than the urine sample (1).unfiltered urine of Desert camels antimicrobial was compared with some antibiotics from beta-lactam and amino glycosides groups, results showed superiority unfiltered urine of Desert of camels in antimicrobial activity.

Isolation and Identification of food Probiotic saccharomyces boulardii by using traditional methods , Vitek 2 system and molecular identification methods. Iraq journal of market research and consumer protection. Volume: 8 Issue1 Pages:42 – 60.

Abstract

This study was aimed to isolate and identify *Saccharomyces boulardii* from Mangosteen fruits (*Garcinia mangostana* L.) by traditional and molecular identification methods To get safe and healthy foods probiotics for use, The isolates and two commercial strains were subjected to cultural, morphological and biochemical tests, The colonies of the isolates were spherical, smooth, mucoidal, dull and white to cream colour on SD agar media .The shape of cells was globose to ovoid and sometimes with budding, in a single form or clustered like a beehive. The isolates and two commercial strains were unable to metabolized galactose and lactose , Results shows that all isolates were unable to utilize potassium nitrate and not grow in the presence of (0.01%) cyclohexamide. Also the isolates and two commercial strains were identified by the Vitek 2 identification system, as *S. cerevisiae* with probability 90-94%, Since there are no data in this device includes *S. boulardii* . Because the cultural, morphological and biochemical tests didn't provide sufficient evidence to distinguish between *S. boulardii* and *S. cerevisiae*, the probiotics strains must be identified up to genus and strain levels by internationally accepted methods, So the *SbR7* isolate which shown high probiotic advantages and two commercial strains were diagnosed molecularly by using specific primers targeting sequence for the region (ITS) of the 5.8S rRNA gene Genomic DNA was isolated from *SbR7* Isolate and ITS region of the 5.8S rRNA gene was amplified using PCR. PCR products was sequenced and compared with the sequence of this region in the DNA of *S. boulardii* available in GenBank (NCBI) using the program BLASTn. Results revealed, this isolate was almost genetically identical (99%) with *S. boulardii* standard strains

In vitro Evaluation of Antimicrobial Activities of Camels Urine Against some Pathogenic Bacteria and Yeasts Kufa Journal For Veterinary Medical Sciences Vol 7, No 1B (2016)

Abstract

This study was designed to examine the antimicrobial activity of unfiltered and filtered fresh camel's urine on the pathogenic bacteria and yeasts in vitro. The camel's urine samples were collected from a 4-5 years she camels (*Camelus dromedaries*) raised in local farm (sample 1) and from Western Desert of Samawa (sample 2) .The physical properties of the samples were analyzed . colures were yellow in the tow samples , and been dark with stored . The pH of both urine samples were ranging between ٧.٦٢ and ٧.٨٤ Respectively. Urine smell distinguish the smell of herbs stored (straw and hay) to sample 1, and the smell of hay appeared (sweet straw) for sample 2 as a result of the different nutrition

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were revealed different inhibition zone on all pathogenic bacteria and yeasts. The diameters of inhibition zones of sample (1) for unfiltered camels urine were reached(20, 21, 15, ٠, 21,17, 18, 21, 19) mm Respectively, and for filtered (16, 12, 10, 0, 12, 11, 12, 16, 13) mm Respectively. Also The diameters of inhibition zones of sample (2) for unfiltered camels urine were reached(25, 24, 23, 16, 24, 19, 21, 23, 22) mm Respectively, and for filtered (22, 18, 17, 11, 20, 14, 16, 20, 17) mm Respectively. The results had shown also that the antimicrobial of unfiltered urine samples was better than the filtered , also the Desert camels urine sample (sample 2)was better than the urine sample (1).unfiltered urine of Desert camels antimicrobial was compared with some antibiotics from beta-lactam and amino glycosides groups, results showed superiority unfiltered urine of Desert of camels in antimicrobial activity.

Evaluation oral dosage with a viable, dead and culture filtrate cells of probiotic bacteria *Lactobacillus planetarium* on rabbits lipid profile levels. Thi-Qar University Journal for Agriculture Research. Acceptable.6(2)2017

Abstract

This study was designed to evaluate the oral dosage of living, dead and culture filtrate cells of probiotic bacteria *Lactobacillus planetarium*, on rabbits lipids profile (which contain total cholesterol TC, triglycerides TG, low-density lipoprotein LDLs, very low-density lipoprotein VLDLs and high-density lipoprotein HDLs). The rabbits were divided into four treatments, each subjected as the followings: first treatment; used as a negative control. second treatment; sub divided into four groups: group1 used as a positive control oral dosage with 100µl skim milk/ 100gm weight/day, and other three groups were oral dosage with 100µl/100gm weight/day with viable, dead and culture filtrate cells of probiotic bacteria *Lb. planetarium*. third and fourth treatments used doses were 300 and 500µl/100gm weight/day from same first treatment.

The results showed significant decrease in TC, TG, LDLs, VLDLs levels and significant increased HDL in the treated rabbits as compared with negative and positive control, the treatment dosage with 300µl/100gm weight/day with viable, dead and culture filtrate cells of *Lb. planetarium* was the best in lowering the TC, TG, LDLs, VLDLs and increased the HDL which reached 51.42, 70.22, 5.29, 14.01 and 32.12 mg/100dl respectively, compared with other treatments and with two control treatment which were 77.23, 129.81, 23.38, 25.96 and 27.89 mg/100dl respectively. Also results showed that dosage with live cells has been the best treatment compared to dosage with dead and culture filtrate cells of probiotic bacteria *Lb. planetarium*.

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بسم الله الرحمن الرحيم
جمهورية العراق



وزارة التعليم العالي والبحث العلمي
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إلى / د. رحيم عناد خضير الزبيدي المحترم / كلية التربية للعلوم الصرفة / جامعة النجف / قسم علوم الحياة
م / قبول بحوث للنشر

بعد التحية

تذات هيئة التحرير البحث المقدم من قبلكم والموسوم (تقييم فعالية التجريع بالخلايا الحية والخلايا
الميتة وراثشج الخلايا الحية ليكتريا *Lactobacillus Planetarium* في مستويات دهون دم الارانب)
وبعد الاطلاع على آراء المقومين ، فقد تقرر قبول البحث في المجلة وسيشتر في المجلد (٦) العدد (٢)
لسنة ٢٠١٧ .

مع التقدير ...

حسنة

أ.د. طارق عكله هديروس
رئيس هيئة التحرير

