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Molecular identification of yeast *Kluyveromyces marxianus* from Iranian dairy products

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Introduction & Objectives: *Kluyveromyces marxianus* is thermotolerant yeast that has been classified in family Saccharomycetaceae. This yeast specie has many demonstrated benefits such as production of enzymes, aroma compounds and ethanol, reduction of lactose content in food products and as a host for heterologous protein production. The purpose of this research was to isolate and molecular identification of *K. marxianus*.

Material & Methods: The samples were collected from the local dairy products of the Lorestan province. They were firstly enriched in SDB Broth. Colony counts from enriched collected samples were performed in the YGC agar. All Plates were incubated in 4-400 C for 72 hours. Identification of yeast strain was done based on the amplification of the internal transcribed spacer (ITS) region. Primer design was accomplished by applying the software primer BLAST. PCR reaction was done based on the ITS primers. Finally, the PCR products were sequenced and analyzed with the CLC sequence viewer software.

Result: The growth of the yeast observed in 40 C, 280 C and 400 C. The presence of the expected bands of 1100 bp exhibited the specific amplification of the ITS region. Sequencing analysis of amplified products with bioinformatics software revealed the 100% similarity between the nucleotide sequences of samples and *K. marxianus* ITS gene.

Conclusion: The result of the present study showed that amplification of ITS region is an appropriate technique for the identification of *K. marxianus*. On the side of industrial applications, the isolated yeast is a potent candidate for applied in the biotechnology and food industry.

Biography

Mojgan Heidarpour has completed her MS from Azad University about 15 years ago and has been working as a full expert in the field of dairy, probiotics and molecular biology along with she is working as the Director of Quality Control in Zist Takhmir Company. A numerous national standards in the field of microbiology and biotechnology have been prepared by her. She has also published more than 20 articles in national conferences and journals.

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