



# International Congress Nutrition: From Laboratory Research to Clinical Studies

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Abstract Book

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CNC-based packaging materials could be used for lengthening the self-life of pharmaceutical, food, and drink products. Coating with CNCs can be considered as one of the appropriate solutions for food packaging application. So, we can explain that cellulose and its derivative has affected every facet of human life and has been closely associated with human activities.

**Keywords:** Cellulose nanocrystals; Food storage; Biopolymer; Nanocomposites.

## Aptasensing in food safety monitoring

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As a consumer and regulator call for improved food quality and safety, a sensitive monitoring of contaminants in food, for example, chemical compounds, drug residues, toxins and pathogens is crucial to assess and avoid risks for human health. Traditional analytical techniques to detect these compounds are usually based on separation techniques with different detectors that occasionally are costly, tedious, require highly trained personnel and not valuable for field analyses. To achieve a sensitive monitoring, there still is a high need for sensitive, simple, quick, cost-effective and portable detection methods. Biosensors contain these characteristics and are thus perfect for food monitoring. The biosensor technology may have in delivering analytical methods capable of overcoming many of the aforementioned technical challenges. A recent trend is the emergence of aptamers as detecting elements that has the potential to replace all the above ligands. Aptamers are short artificial single-stranded DNA alternately RNA segments. Targets for which aptamers can be developed are varied and range from small molecules to proteins and even whole cells. In addition to this advantage, aptamer technology offers several other benefits over antibodies (sensitivity, specificity, reusability, stability, non-immunogenicity, cost-efficiency), which can be easily exploited in biosensor technology. Aptasensors are thus basically biosensors based on aptamers as ligand molecules. Here we review the various applications of aptasensors in the food industry.

We have clustered aptasensors as indicated by their signal-harvesting methods, including optical and electro-chemical approaches.

**Keywords:** aptamer, biosensor, food safety

## Characterization and Genetic Identification of Lactic Acid Bacteria Isolated From Iranian Fermented Dairy Products

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A collection of 62 LAB isolates were obtained from fermented dairy product samples manufactured by households in different regions of Iran and Azerbaijan. The obtained isolates were tested for antimicrobial and proteolytic activity. Ten isolates showing inhibition of test organisms, such as *Lactobacillus brevis* and *Listeria monocytogenes*, and three proteolytic isolates were obtained and characterized. The ability of strains to grow at different temperature, pH, presence of different concentrations of NaCl, which are conditions occurring during the technological processes of food manufacturing, was tested. Obtained active isolated were identified to species level by 16s rRNA fragment sequencing. The LAB strains isolated and characterized in the present work are potential candidates for application as starters in dairy industry.

**Keywords:** lactic acid, dairy, genetic

## Study of Somatic Cell Count (SCC) and TBC Changes in Dairy Farmers in Birjand, Iran

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**Background:** Milk and dairy products have a special status in human nutrition as a source of protein and high nutritional value. Important indicators for assessing the quality and health of milk are the number of somatic cells and the total count of germs. Somatic cells are composed of

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Mashhad University of Medical Sciences (MUMS) has aimed to develop an international congress regarding basic sciences related to health and human nutrition in cooperation with ministry of health of Iran. This international congress is in line with the objectives of the UNESCO and WHO. One of the most important benefits of this international congress is the opportunity to establish a Health Related Basic Science and Human Nutrition study center. To achieve this goal, we are excited to be hosting the first International Congress of " Nutrition: from Laboratory Research to Clinical Studies" (NLRCS). The purpose of the congress is to bring together cellular and molecular researchers, nutritionists, physicians, experts in food and health and other specialists to discuss the challenges of the interplay between Nutrition Sciences and medical intervention in all age groups. This scientific meeting is an invaluable opportunity to exchange ideas and knowledge regarding nutrition and health issues, which is in line with the First International Symposium of Nutritional Implication for Public Health. The symposium will be conducted with technical support of WHO and in collaboration with UNESCO.