The Function of the Gut and Gut Microbiota

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<Summary>

The gut is a complex organ that comprises parts of the digestive, immune, and nervous systems, among others. In addition, more than 1,000 different kinds of bacteria live in gut.

The influence of the microbiota on immune and nervous system function is described herein.

The immune function of the gut is the most extensive of any part of the human body. The gut microbiota contributes to the development and maintenance of the overall immune system. However, when the bacterial composition of the gut deviates from normal, adverse effects on the overall immune system have been observed, such as increased risk of the onset of allergies, inflammatory bowel disease, as well as other conditions.

In addition, the gut microbiota influences the enteric nervous system and contributes to the maintenance of proper gut motor function.

Furthermore, the microbiota influences the autonomic nervous system that connects the brain to the gut and is said to affect the function of both the autonomic nervous system and the brain.

Arsenic Compounds in Marine Products

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<Summary>

Marine organisms accumulate various elements in their tissues and organs including arsenic, a known toxin. As a result, marine products contain high concentrations of arsenic. Great attention has been paid to organoarsenic compounds after they were identified as the major arsenic containing compounds in marine organisms. The first organoarsenic compound to be isolated and identified was a water-soluble compound, arsenobetaine, which was obtained from the western rock lobster Panulirus longipes cygnus in 1977. Since then this compound has been shown to occur in various other marine animals, independent of their feeding habits and trophic levels. The discovery of arsenobetaine led to further studies and the detection of arsenocholine and tetramethylarsonium ion in various animals, and arsenosugars in various algae and phytoplankton. The toxicities of these compounds are considerably lower than the toxicities of inorganic arsenicals. Besides the water-soluble organoarsenic compounds, lipid-soluble arsenic compounds have also been identified in both marine animals and algae. These compounds include arsenic analogues of phosphatidylcholine and sphingomyelin, fatty acids each with a terminal dimetylarsinoyl moiety, and long-chain hydrocarbons each with a terminal dimethylarsinoyl moiety. This article discusses of the levels, chemical forms, toxicity and circulation of arsenic compounds found in marine environments and organisms.

Current Topics of “Disorders of Amino Acids Metabolism”

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<Summary>

Amino acid metabolism is a complex process, involving a large number of metabolites, which are found in dietary proteins, vitamins and especially related with enzymes in every tissue. Although there are great deals of complexity about amino acids metabolism, it maintains the homeostasis of Amino acids in whole body. We, specialists for inborn error metabolism, focus on dysfunctions of enzymes and transporters for amino acids, lead to “Disorders of Amino Acids Metabolism”. In this chapter, we summarize novel identified “Disorders of Amino Acids Metabolism”.

Application of MALDI-TOF MS for Bacterial Classification in the Food Industry

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<Summary>

Food processing plants use a variety of tests for microorganisms to assess the quality of products, and to manage hygiene within the plant. The microorganisms are not only limited to bacteria that cause food poisoning, but also include those that are responsible for spoilage, and can vary in species depending on the food produced. Culture and molecular biological methods have been frequently used to identify these microorganisms; however, the culture method can be time-consuming and laborious, whereas molecular biological methods are associated with high costs. Recently, MALDI-TOF MS has garnered attention as a new method for identifying microorganisms at relatively low running costs, which eliminates the issues with previous methods. Moreover, this method can also be applied to distinguish between strains by assessing the slight variations in the protein profiles of bacterial strains. This report explains the benefits of MALDI-TOF MS for bacterial identification and its application in the food industry, including future prospects.

Report of the 46th Session of the Codex Committee on Food Additives

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<Summary>

The Codex Committee on Food Additives held its 46th Session in Hong Kong, Peoples Republic of China from March 17th to 21st, 2014. The Session was attended 246 delegates representing 51 Member Countries and 33 Member organizations and international organizations. The summary and conclusions of the Session are as follows;

1. For adoption by the 37th Session of the CAC at Step 8 or 5/8
   The Committee forwarded;
   - Draft and proposed draft food additive provisions of the General Standard for Food Additives (GSFA) for adoption at Step 8 and 5/8;
   - Proposed draft Guidelines for the Simple Evaluation of Dietary Exposure to Food Additive (revision of CAC/GL 3-1989) for adoption at Step 5/8;
   - Proposed draft amendments to the International Numbering System for Food Additives for adoption at Step 5/8; and
   - Proposed draft Specifications for the Identity and Purity of Food Additives for adoption at Step 5/8.
2. Codex Standard and Related Text for revocation
   The Committee agreed to request the 37th Session of the Commission to revoke;
   - Food additive provisions of the GSFA.
3. For approval as a new work
   The Committee agreed to;
   - Prepare a discussion paper on inconsistent terminology related to flavorings in the Guidelines for the Use of Flavorings (CAC/GL 66-2008) and other Codex standards.
4. Other Matters
   i) To the CAC and FAO/WHO
      The Committee agreed;
      - To continue work on the alignment food additives provisions of commodity standards and relevant provisions of the GSFA with a view to finalize work on the meat standards;
      - To prepare a discussion paper on the use of additives in additives;
      - To forward the Priority List of the Compounds Proposed for Evaluation to FAO and WHO for their follow-up; and
      - To prepare a discussion paper on different options for the use of the outcomes of the prioritization exercise and other feasible steps to identify compounds for re-evaluation by JECFA.
   ii) To the other Committee and task Forces
      The Committee;
      - Endorsed the food additive provisions forwarded by the CCFFP.

Report of the 8th Session of the Codex Committee on Contaminants in Foods

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<Summary>

The Codex Committee on Contaminants in Foods (CCCF) held its 8th Session in The Hague, The Netherlands, from March 31st to April 4th, 2014, at the kind invitation of the Government of the Netherland. The Session was attended by 218 delegates representing 64 Member Countries, one Member Organization and 12 international organizations. Ms. Wieke Tas, Chair of CCCF, Ministry of Economic Affairs, Animal Agri Chains and Animal Welfare Department, the Netherlands, chaired the meeting as her first time. Main items were “Maximum Levels for Lead in selected commodities, and for Arsenic in Rice”, “Amendments to Codex General Standard for contaminants and Toxins in Food and Feed” and “Code of Practice for the prevention and reduction of mycotoxin contamination in cereals and cocoa.”

< Friends in ILSI >
The 5th ILSI Japan/MAFF Project: Workshop and Roundtable Discussion on Food Safety and Standards

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<Summary>

The 5th workshop & Roundtable Discussion on Food Safety and Standards supported by the Ministry of Agriculture, Forestry and Fisheries (MAFF) Japan were held during March 4 and 5 in Myanmar, organized by ILSI Japan and ILSI Southeast Asia Region, co-organized by the Ministry of Health Myanmar.

About 70 participants from various Asian countries including the representatives from MAFF, Ministry of Health, Labor and Welfare (MHLW), and Consumer Affairs Agency (CAA) in Japan gathered, discussed and exchanged the relevant information with very enthusiastic manner.

DAY 1 was the Workshop and open sessions divided in three sessions. The representative speakers gave presentations according to the topics of the session, and the panel discussion session was followed by the speakers and audiences on the floor.

DAY 2 was as usual the closed Roundtable Discussion with the representatives of each country, co-chaired by the professors from Indonesia and Thailand. The representatives from Cambodia, Laos, Myanmar and Vietnam presented the updates of regulatory frameworks and management systems of Food Safety, activities, challenging issues and so on.

After the presentations, the representatives of these 4 countries were asked to participate in the experimental program. They got 40 minutes to discuss among them to identify the food safety challenges in their country and capacity building needs, and share to others. It was the first time to have such challenging program and it was very impressive to see how the representatives discussed and summarized their tasks within such short time and presented.