

Postgraduate education course

FUNCTIONAL MICROORGANISMS: HEALTH RELEVANCE AND POTENTIAL TECHNOLOGICAL APPLICATIONS IN FOOD AND PHARMACEUTICAL PRODUCTS

Organizers: Functional Foods Forum and Institute of Biomedicine, Faculty of Medicine, University of Turku, Turku, Finland

Aims/Learning objectives: Obtain thorough knowledge on biotics (pro-, pre-,syn- and postbiotics as components of foods and pharma) and fermented foods (tehnologies and health aspects), get deep understanding of microbiota modifying foods as novel means of influencing health and well-being. Get the practical aspects of LABwork in the area and obtain regulatory understanding of the use of food and pharma components with microbiota modulating agents.

Time and place: 8th May to 12th May 2023, University of Turku campus, Turku, Finland (lecture room announced later to those who have signed up for the course)

Number of participants: 25 for laboratory work, not limited for lectures

Credits: 2 credits including course work, 1 credit lectures and advance reading

Sign up by 30.4.23 anruvi@utu.fi

MONDAY May 8th 2023

8:45-9:15 Registration of participants, welcome, presentation of activities: Kirsi Laitinen/Seppo Salminen

9:15-9:45 Intestinal microbiota and probiotics, prebiotics, synbiotics and postbiotics (Seppo Salminen, *in person*)

09:45-10:30 Experimental models of gut microbiota (Sauli Haataja, *in person*)

10:30-11:00 Break

11.00-11.30 Selection of probiotics: correlation between in vitro and in vivo studies (Gabriel Vinderola, *in person*).

11:30-12:30 Industrial perspective of probiotics (Arthur Ouwehand, *in person*)

12:30-14:00 Lunch Break

14:00-17:00 Laboratory work (Gabriel Vinderola and Arkadiusz Zakrzewski, *in person*)

TUESDAY May 9th 2023

09:00-10:15 Fructophilic lactic acid bacteria for food application (Akihito Endo, *online*)

10:15-11:00 The developing infant microbiota; factors affecting it and opportunities for probiotics and prebiotic (Miguel Gueimonde, *in person*)

11:00-11:30 Break

11:30-12:15 Diet and gut microbiota interactions (Noora Houttu, *in person*)
12:15-13:00 Biomass production and scaling up the production of functional microorganisms (Gabriel Vinderola, *in person*)
13:00-14:00 Lunch break
14:00-17:00 Laboratory work (Gabriel Vinderola and Arkadiusz Zakrzewski, *in person*)

WEDNESDAY May 10th 2023

09:00-9:45 Probiotics in clinical intervention studies (Kirsi Laitinen, *in person*)
09:45-10:45 Ageing as a target for probiotics (Miguel Guimonde, *in person*)
10:45-11:00 Break
11:00-11:45 Fermented foods in Eastern Europe (Arkadiusz Zakrzewski, *in person*)
11:45-12:30 Postbiotics: how are they defined? (Gabriel Vinderola, *in person*)
12:30-14:00 Lunch Break
14:00-15:00 Carbohydrate active enzymes and gut microbiota (Arno Hänninen, *in person*)
15:00-17:00 Preparation of a laboratory/seminar report

THURSDAY May 11th 2023

09:00-12:00 Preparation of a laboratory/seminar report
12:00-13:00 Lunch Break (option Flavoria/Aistikattila)
13:00-16:00 Multisensory evaluation of the food products (Sensory laboratory or Aistikattila) (Anu Hopia)

FRIDAY May 12th 2023

09:00-11:00 Analysis of laboratory results (Gabriel Vinderola)
11:00-13:00 Seminar presentations, group discussions, summary & conclusions (Kirsi Laitinen, Gabriel Vinderola and Seppo Salminen).

Teachers:

Gabriel Vinderola, National University of Littoral, Argentina
Akihito Endo, Tokyo University of Agriculture, Japan
Miguel Gueimonde, IPLA, CISC, Spain
Arkadiusz Zakrzewski, University of Warmia and Mazury, Poland
Arthur Ouwehand, International Flavors and Fragrances & University of Turku, Finland
Sauli Haataja, University of Turku, Finland
Noora Houttu, University of Turku, Finland
Arno Hänninen, University of Turku, Finland
Anu Hopia, University of Turku, Finland

Seppo Salminen, University of Turku, Finland
Kirsi Laitinen, University of Turku, Finland

Advance reading material announced in the net when registering for the course.