Future Horizon of Nutrition: WP7 - Conducting dissemination and project implementation

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Core partners

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SPECIAL FOCUS on DISSEMINATION ACTIVITIES. Prevention research project planned by FUHONU provides a fundamental importance to develop a platform for dissemination and diffusion of knowledge, therefore will be linked to each part of every stage of the project.

Goals: The WP organized by Egocreanet will support research and innovations in the fields of the FUTURE HORIZON OF NUTRITION Project with the aim to generate new sharing knowledge on microbiome and to contribute to health prevention, and the overall improvement of quality of life.

Objectives:

The objectives of WP dissemination should be utilization of FUHONU research of two fundamental targets a) society in general and in particular to nutritionists, physicians and health professional and managers b) agrifood and nutraceutical of pre-probiotics industry. Such utilization means opening an appropriated dissemination of different things to different members of a target audiences; in some cases, it may mean understanding the conceptual innovation of research findings and or benefits of some innovation products and productions. The critical element of utilization will be focused as an important modality of information exchange so that the FUHONU research outcome must be interactive as well the dissemination must fit the new information to individual with her or his prior understandings and experience.

Media:

Besides the WP7 will utilize ICT-tools for improved processing/ nutritional quality/ sustainability/ safety assessment to meet management needs innovation of Agro-food and nutraceutical SMEs Following such utilization modality of interactive dissemination the FUHONU Program will initiate as a dynamic effort in internet platforms to improve the gut –microbiome advanced knowledge, attitudes, and practice skills to physicians and other health professionals in the field of human nutrition, with an emphasis on implementing research results into practice guidelines. During the duration of the FUHONU project the WP7 will co-organize a network of partners and consulting centers and stakeholders to develop, implement, evaluate, and disseminate innovative model of nutrition, curricula for permanent training of university students and residents. The WP7 dissemination program constitutes a major new effort for enhance the Future Horizon of Nutrition criteria and to help address a long-standing problem of deficiencies in knowledge among health care providers in the translation and application of the science of human nutrition to the practice of preventive medicine. To this scope the WP7 would establish relationships with other professional societies, organizations, and consortia that also are working in the area of multidisciplinary dissemination and training in nutrition.

Further elements of the effective dissemination plan:

- A) Collaboration and sources of communication to improve dissemination efforts.

These include open relationships and gentlemen agreement with the following organizations:

- National Institutes of Health. NIHinfo@od.nih.gov.
B) Dissemination WP7 will utilize Internet communication tools for implementation that will involve staff time and budgetary resources and also involve third-party assistance from graphic or Web designers, printers, or others with special expertise. These organizations, or information provider will be engaged in WP7 Dissemination to develop a FUHONU website, blogs, facebook pages (as: http://www.facebook.com/groups/195771803846822/), besides various forms of public presentations, and publications will be important components of the WP7 strategy to disseminate materials to a broader audience of nutrition educators. The WP7 Dissemination could be useful to a variety of users, including (but not limited to) organizations and individuals that/who: Conduct nutrition surveys innovation; Implement food/nutrient programs; Make policies related to nutrition and/or nutritional status; Fund new research on or programs related to food/nutrition innovation

C) To manage the implementation of FUHONU project in cooperation with the Steering Committee (with the role of monitoring the quality of implementation development) will be organized a network of experts from many disciplines throughout the organization of a stakeholder community. The FUHONU internet community will be developed through planning an agenda to implement multiple initiatives to address the challenges to develop Future horizon of nutrition and contribute to the European leadership in Gut-Microbiome research development.
Deliverables:

1. Organization of semester- workshops to present the aims and research results of FUHONU project (for university students, food industrial associations, companies)

2. Educational exhibitions, presentations on the field of food science and innovation

3. Establish a food science and consumer protection competition (FOODTEST) on national and European level, as well, for university students etc.

4. Preparing short films about the work of the individual research centers/teams

5. Preparing short films about food processing technologies and safe utilizations of foodstuffs

6. Creating and managing a facebook profile of FUHONU “Food ingredient of the month” – introduce the food ingredients with positive physiological effects

7. Creating and managing a facebook profile to PhD students working on FUHONU project

8. Establish a blog to introduce the economical and society benefits and the innovative result of R+D activity of FUNHONU project

Milestones:

In order to increase participation research potential and innovation of the project FUHONU will be co-organized annually, four public Conferences, (of one-day duration) each) whose activities would contribute to closing the gap in research and innovation in order to contribute to the realization of European competitiveness in the sign of the European strategy Horizon 2020

Note: Detailed calendar of the four Conferences may be described in the next year.

TITLE, APPROXIMATE DATES, LOCATION of the Conferences. They will be organized in order to increase participation research potential and innovation of the project FUHONU and to contribute to closing the gap in research and innovation in order to contribute to the realization of European competitiveness in the sign of the European strategy Horizon 2020.

Milestone 1: KICKOFF meeting Bologna (IT) Organized by: Bruno Biavati: bruno.biavati@unibo.it

Milestone 2: First year Conference organized by: Mess Juriaan: jurrian.mes@wur.nl

Title: “Microbiome and immune-defence” Wageningen, The Netherlands, Approximate date: Sept 2014

Milestone 3 Second Year Public Conference Theme: “Nutrition, Gut Microbiota and Health” will be held on 26th September 2015 in Košice, Slovakia. This conference will be co-organized with: www.pamidainternational.com/en/FP7.


Milestone 5: Fourth Year “Future Horizon of Nutrition” Firenze organized by Egocreanet. Approximate date: 2016

List of Experts of the Leader of WP7: Experts in new research-based dissemination field are assured by the staff of Egocreanet. They are well organized to incorporate implementation of reaching decisions, making changes, or taking other specific actions designed to improve outcomes and disseminate interactively ideas in order to benefit from the research outcomes about the Nutritional prevention as a ongoing and final results of FUHONU Project
The staff Egocreanet is composed by multidisciplinary experts they are.

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This cooperative staff of Egocreanet is able to use varied dissemination methods, including written reports, electronic media, and person-to-person contact. The experience in multidisciplinary literature concerning dissemination strategies will be the characteristic of the Leader (Egocreanet) and of the core group of partners included in WP7 in order to lead to a public perception that to correspond to an effective understanding of FUHONU advanced research. In carrying out a dissemination activity under this FUHONU program will be shared with all partners the correspondence with relate research findings to practical innovation and applications useful in planning, policy making, program administration, and delivery of services for improving industry innovation. Besides will be established a multiplicity of linkages to resources of stakeholders that may be needed to implement the information and technical assistance in order to be effective in encouraging widespread adoption and implementation of new programs, ideas, and strategies.

**Additional Experts of the WP7 Core Group of partners will be included.**

**IMPLEMENTATION CRITERIA for WP7 of FUHONU PROJECT.**

Modern nutritional research is aiming at health promotion and disease prevention and on wellness performance improvement. Hence a primary goal of modern nutrition research is to optimize health and prevent or delay disease. The nutritional research focus the study of healthy-biomarkers to quantify health optimization. Particularly assumes a great importance the quantifying “normal homeostasis of microbiome” and so that developing validated healthy-biomarkers are formidable tasks because of the resilience of homeostasis in relation to diets in the contest of the inter-individual diversity. The healthy-biomarker research needs to reflect subtle changes in homeostasis and the efforts of the body–brain interactions as they are necessary to maintain an healthy homeostasis. Biomarkers can be find as drivers – signals of health and thus can be the focus of a deeper implementation of the studies about the functionality of microbiome both in metabolism, gut-barrier inflammation, and also deepening the research of various deficiencies about the cross talk between microbiome and enteric and central brain producing psychological stress and other behavioral impairments and diseases. The healthy biomarkers can be considered as signals to take in consideration in order to maintaining health and preventing metabolic diseases through personalized diets.

FUHONU project implementation will develop advances in healthy gut microbiota to develop new design on functional food and nutrition sciences highlighted that new personalized products can provide an high impact with components able to both to improve health status and wellbeing and/or reduce the risk of some diseases. Therefore, much research will be undertaken on development and application of technologies to develop nutraceuticals and functional foods and dietary supplements that can make health claims and/or structure/function claims. Health claims state that an ingredient may reduce the risk of a disease, whereas, structure/function claims declare that an ingredient in the product could benefit a body’s structure (the skeletal system) or its function (the circulatory system) and also mental functions / the neurotransmission system. The FUHONU project implementation will includes a fundamental dissemination strategy of scientific information on the common natural products rich in nutraceutical components, thus explains the importance of probiotic and prebiotic foods and finally focused on recent guides dealing with functional formulations for specific human diet related diseases.

The human microbiome is a source of genetic diversity, a modifier of disease, an essential component of immunity, and a functional entity that influences metabolism and modulates drug interactions. In the implementation of the four year FUHONU project will be open a scientific
interactive blog to debate how these emerging healthy microbiome knowledge are useful to understanding various applications of wellness and well being. The debate will start to underline the importance of the early colonization of the infant gut by microorganisms that over the first year of life is crucial for development of a balanced immune response. Early alterations in the gastrointestinal microbiota of neonates has been linked with subsequent development of allergic and other metabolic diseases. From these findings we will implement those microbiome knowledge through a specific epidemiological trial to find the best protective effect of probiotics as food-supplementation in order to avoid subsequent development of diseases through promotion of a stable homeostasis of gastrointestinal community from infants to older person. This epidemiological trial will provide to understand and support the best relationship between nutrition and global health aiming to develop an European nutrition survey and to develop an evidence-based dietary guidance to support prevention to diet-disease relationships and to enhance optimal health.

Besides microbiome plays a beneficial role for the prevention of human host favouring the metabolism of non digestible food components (called Pre-biotics) producing vitamins and short-chain fatty acids useful in shaping the host immune system. So that a diet’s trial based on additioning pre-biotics will be expected to play a dominant role in shaping an healthy gut microbiota to prevent from a long term dysbiosis that lead to an increased level of gut-barrier permeability. Hence the FUHONU project implementation would propose a guide to avoid to provoke chronic inflammation of the gut barrier getting personalized possibilities for modulating an healthy gut microbiota and also would give to the food industry some strategies to designing new functional foods in preventive management of the metabolic and immunologic diseases. Thus the implementation of FUHONU project will strengthening a better understanding about the implications of an healthy microbiome in homeostasis and in prevention of human health and active ageing.

Furthermore the implementation project would focus to link dietary consumption of prebiotic food ingredients and probiotic microorganisms to health psico-psychological benefits and this goal means to elucidate the complex interactions between the enteric system, microbiota and neuronal areas that may provide a rational basis for understanding the cross talk between brain and microbiome. In that context will be an important factor to identify how the “taste-receptors” (see Note *) living in the intestinal gut are able to to transduce signals originating from the microbiome.

In the blog debate will be diffused the on overall implementation providing information to the project status communication to stakeholders and team members of the most important documentation, reports, milestones and key aspects of the project, in order to disseminate the FUHONU strategy in identifying future horizons and challenges, many of which are common to human nutrigenetic studies to predict that in the future personalized nutrition based in functional, or food fortification will be able to overcome risk of human metabolic diseases.

In particular looking at the health risks of obesity and its socio-economic consequences the FUHONU research proposal will be focused at the development and implementation of an innovative, integrated, criteria to obesity prevention, through a consultant system involving multidisciplinary science program.

In conclusion FUHONU Working plan seven, will support the implementation and dissemination of future horizons of nutrition science, with its application on functional food development and nutrition policy changes that needs a new conceptual framework on preventive medicine.

The FUHONU project will, stress in consideration that man is a "super organism" in an healthy symbiosis with intestinal flora.

Hence the project implementation in conclusion, would propose new principles to govern and guide nutrition science and its application to food production innovation and nutrition new policy, based on 2020 perspectives that takes into account extended multidisciplinary and multiactorial dimensions and domains between multiple genetics and epigenetics factors.
The final step of FUHONU implementation strategy will be to understand how the existing business processes can be improved by means improving a start up of a Consultant European Community for improving prevention for health. The purpose of this Consultant Community will be to give the science maximum relevance and usefulness in addressing the challenges and opportunities to delivering to the EU 2020 Horizons of health prevention priorities.

During the project FUHONU WP7 will search for adhesion to develop this EU Consultant Community. A final public open congress will be held in Florence in 2016 that shares the project’s research results with a wider audience from the partner’s institutions, regional government and public health agencies, private sectors, and Industry. International experts will also be invited to share their experiences on related FUHONU nutritional prevention topics founded on the idea that the improvement of dietary supplements and functional foods may decrease the country’s health care expenses.

**Deliverables of WP7 Implementation program:**

1. Development of a project plan for overarching project
2. Development of a communication plan
3. Production of three-monthly project status reports to document progress
4. Production of a final report
5. Production of project completion report
6. Project review (Continuous improvement)
7. Project-and international relationship annual Report

**Expected impact:**

Gut Microbiota, and their role on human health and disease prevention is emergent area of research, presenting a new paradigm full of opportunities for nutritional applications that need to get an high impact through dissemination activities.

*Hence WP7 would promote and disseminate healthy gut microbiome advanced knowledge to contribute to the dissemination of new approaches for the prevention of metabolic and immunologic diseases, and impairment of brain and other organs by reshaping the gut microbiome through lifestyle interventions, replacement therapies, development of pro and prebiotics and innovative personalised products.*

Such research and innovation need to be transferred to support industry, dealing with the organization of information networks to enhance the objective identifies needs, opportunities and institutional requirements for a more efficient cooperation. Also thewp7 dissemination program will develop management information systems for better cooperation between research and company, control and risk management in enterprises, create lean management concepts, improve infrastructures for SME management support, enable SMEs to optimally respond to emerging risks.

In conclusion **WP/7 will enhance the understand the role of diet in delivery of health promoting ingredients and produce healthy and quality of food’s fortification, including the development of pro and prebiotics and innovative personalised products, and diffusing lifestyle interventions and replacement therapies, ... with the ultimate goal of promoting a healthy and active population and a high quality of life, both key in delivering on the EU2020**

(Note *) FUTURE HORIZON OF NUTRITION NOTES on-TASTE RECEPTORS
The intestine contains receptors of taste. Just as we feel the taste of the food for the 'activation receptors of the tongue similarly the enteric nervous system receive information from a network of receptors, similar to those of the tongue. Besides similar taste-receptors resides not only in the digestive system of the intestine but also in the heart, lungs and brain.

Through this pathway of taste-receptors in the digestive tract may be developed a communication of that interface brain and gut; this cross-talk permits to the brain to receive a sampling of information on the metabolic products processed by numerous bacteria, Firmicutes or Bacteroidetes, etc., which are present in the various levels of digestion.

Already since 2007, and was found the existence of two receptors taste that have a role in responses of glucose sensor in intestinal lumen (Jang, Kokrashvili, et al. 2007 Proc Natl Acad Sci USA 104:15069-15074). Today it will be possible to find many articles and news that highlight how a network of taste receptors that are scattered in various vital organs related to power and well-being and satisfaction in eating. It seems possible that the repertoire of taste receptors expressed in the intestine, in particular in the colon, but also in the small intestine, correlated with those of the brain, can take a decision about satiety and other associated interactive information by forming an extensive network of interactive relationships favoring a personalized behavior to food intake.

Many of these receptors of intestine seem to be completely similar to those of the various sensations of bitter and acid and also sweet and umami in the mouth. The reception and transmission of those mutual information between the brain and intestine through the network of taste receptors is very selective, as it is believed capable of being sensitive to metabolites of plant origin from those composed of amino acids. Taste receptors are designed to detect specific classes of chemicals and to transmit signals to the brain. Therefore, the taste receptors scattered in intestine seems to take on a role as a monitor of the symbiosis of metabolic function of the microbiome with those of our genome.

Brain is informed promptly, about the gut-microbiome homeostasis that is co-organized between genome and microbiome; so that brain stores data and memorize how to control the homeostasis through using vagus nerve in order to analyze the dynamics of the digestive system. So we know that also the faecal fermentation can be monitored in some way yet to permit to the brain to investigate distinct advantage of the symbiosis between intestinal bacteria and human host.

Thus may be possible during the project FUHONU, to implement the research on “gut-brain axis” by verify such hypothesis, about the communication that takes place through taste receptors distribution in various organs of the body and the brain. The expected results may play a role in the optimization of knowledge of the digestive process, through better understanding as the taste receptors network can customize diets personalization and consequently getting a better nutritional well-being and the mental and physical health in our lives.

- Biblio online on Taste Receptors:
  - http://ajpgi.physiology.org/content/292/2/G457.full;
  - http://www.nature.com/nrn/journal/v12/n8/fig_tab/nrn3071_F1.html;
  - http://jcb.rupress.org/content/190/3/285.full