



Backing visionary entrepreneurs

EIC Pathfinder Challenge: Precision Nutrition Information day

Ivan Stefanic

EIC Programme Manager for Food Chain Technologies and Novel & Sustainable Food





16:00 5 min	Opening	Anne-Marie Sassen (EIC/EISMEA)
16:05 25 min	'Precision nutrition' challenge and EIC proactive management	Ivan Stefanic, (EIC/EISMEA)
16:30 30 min	Q & A session about the challenge and technical details of the challenge	Ivan Stefanic, Konstantinos Michos, & & Anne-Marie Sassen (EIC/EISMEA) All participants via Sli.do
17:00 25 min	Pitch session: 1. New Microalgae strain; 2. Welcome2; 3. APReM; 4. INRAE; 5. Statens Serum Institut; 6. Hologenomix	Registered participants
17:25 5 min	Closing remarks	Anne-Marie Sassen & Ivan Stefanic
17:30	End of the session	





- Is to help you to align your proposal with the parameters of this challenge call.
- Is to provide all relevant information, clarify doubts and prevent you from making unnecessary mistakes.
- Is not to provide you the feedback of appropriateness of your individual proposal to this challenge call.

Housekeeping rules



- Please note that your camera and microphone are switched off by default
- Be aware that this meeting is recorded, also the pitching session. Recording and slides of the event will be available on the event page
- Join the discussion and **ask your questions via Sli.do**
- Please submit **your question as Anonymous** in Sli.do if you do not want your name to appear in the recording.

Join at **Sli.do**

With the event code

#Challenges







EIC Work Programme 2023





EIC Work Programme 2023





EIC Work Programme 2023





Proactive Management Support



EIC Project Officers

European Innovation Council

EIC Programme Managers (EIC PMs): key roles

Oversees a thematic sector working both on science/innovation contents and on community building

Identifies S/T critical thematic areas, pre-select topics within these areas and validates the topics for the purpose of **developing Challenge Calls**

Content-wise management of sector-specific portfolios (cluster of projects with shared perspectives) created on the basis of the ongoing projects or as outcome of the Open and Challenge Calls

EIC Pathfinder Challenges - introduction

European Innovation Council



- Build on new, cutting-edge directions in science and technology
- Disrupt a market or to create new opportunities by realising innovative technological solutions grounded in high-risk/highgain research and development;
- Establish a portfolio of projects for each Challenge that explore different perspectives, competing approaches or complementary aspects;
- Proactively steered by EIC Programme Managers

Pathfinder calls 2023 – Summary table



	Pathfinder Open	Pathfinder Challenges
Total budget	€179.5 million	€163.5 million
Proposals (indicative)	Up to €3 million	Up to €4 million
Funding rate	100% of eligible costs	100% of eligible costs
Opening	10 January 2023	20 June 2023
Deadline	7 March 2023 at 17.00 CET	18 October 2023 at 17.00 CET
Length of proposal	17-page proposal (part B)	25-page proposal (part B)
Applicants	Consortia min. 3 partners from 3 different Member States /Associated Countries (of which at least 1 partner in a Member State)	 Consortia: If 2 partners: from different MS/AC, Min 3 partners from 3 different MS/AC (of which at least 1 partner in a MS)

Single legal entities in a MS/AC

Projects in Agrifood sector till 2022

GHG REDUCING TECHNOLOGIES (incl. carbon syncs)	MACHINERY & EQUIPMENT	DIGITALIZING AGRICULTURE (incl. precision agriculture)	NOVEL FOODS	FOOD PROCESSING & PACKAGING
A X Z	A X 4	AXS	A X 4	A X 20
IMPROVED PLANT VARIETIES	CROP PROTECTION	SOIL HEALTH & MANAGEMENT	NUTRITION, LABELLING, TRACEABILITY	QUALITY OF FOOD & BEVERAGES
Px2 Tx1 Ax0	A X 4	A x 0	A X 3	A X 10
FOOD STORAGE & LOGINASIE	IRRIGATION & WATER	FERTILIZATION	URBAN AGRICULTURE & VERTICAL FARMING	FOOD WASTE
A x 3 cals	A X 6	A X 4	A X 1	A X 2
MPROVENTS IN ANIMAL HUSBANDRY	AQUACULTURE (plants & animals)	OTHER IMPROVEMENTS IN CORE AGRICULTURAL TECHNOLOGIES	PRECISION FERMENTATION (EDIBLE &NON-EDIBLE)	OTHER
A X 8		A X 8	A X 1	
	A X 1			A X 1
FORESTRY A X 2	BIOFULES A X 1	SOCIAL SCIENCES		

Projects in Agrifood sector

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GHG REDUCING TECHNOLOGIES (incl. carbon syncs)	MACHINERY & EQUIPMENT	DIGITALIZING AGRICULTURE (incl. precision agriculture)	NOVEL FOODS P3	FOOD PROCESSING & PACRAGING
IMPROVED PLANT VARIETIES	CROP PROTECTION	SOIL HEALTH & MANAGEMENT	NUTRITION, NUTRITION, Nutrition TRACEABILITY	QUALITY OF FOOD & BEVERAGES
FOOD STORAGE & LOGISTICS	IRRIGATION & WATER MANAGEMENT	FERTILIZATION	URBAN AGRICULTURE & VERTICAL FARMING	FOOD WASTE
IMPROVENTS IN ANIMAL HUSBANDRY	AQUACULTURE (plants & animals)	OTHER IMPROVEMENTS IN CORE AGRICULTURAL TECHNOLOGIES Open calls	PRECISION FERMENTATION (EDIBLE &NON-EDIBLE)	OTHER
FORESTRY	BIOFULES	SOCIAL SCIENCES		



Challenge Proposal is defined

- using holistic approach,
- using life-cycle approach,
- to foster the EU technological autonomy and leadership,
- with an account of EU strategic plans and relevant initiatives.
- Pathfinder proposal aims to to investigate and provide scientific evidence of the role of diet in Food-related Health Conditions (FrHCs) and Noncommunacable Chronic Diseases (NCDs).



Why?

- Almost 2 billion people globally are overweight or obese.
- NCDs are significant cause of death and decreased quality of life.
- One diet plan fits all definitely isn't working.
- Personalized nutrition is very expensive.
- Precision nutrition is a feasible solution that can improve well being of individuals while reducing aggregate costs.

Precision nutrition





Precision nutrition





Precision nutrition







1 257 results found for: nftxt = "microbiome" AND nftxt = "nutrition"



Exclude



Earliest priority date

632 results found for: nftxt = "glycan" AND nftxt = "nutrition"



Earliest publication date (family) Earliest priority date



299 results found for: nftxt = "microbiome" AND nftxt = "glycans"



Earliest publication date (family) Earliest priority date From 2005-01-01 From 2003-01-01 To 2020-12-31 To 2022-12-31 2005 2022 2003 8 300 80 8 300 -225 -225 150 -150 40 30 -75 -75 20 800800 0.00000 2007 2012 2017 2022 2007 2011 2015 2020 Earliest publication date (family) Earliest priority date



Background and scope



- Dietary guidelines provide recommendations on foods, food groups and dietary patterns to achieve reference intakes of nutrients, prevent chronic diseases and maintain overall health in the general population. However, dietary recommendations are not sufficiently stratified across different categories such as age, gender, ethnicity, genetic predisposition to certain Food-related Health Conditions (FrHCs) such as but not limited to obesity and malnutrition) and Noncommunicable Chronic Diseases (NCDs) such as but not limited to diabetes and hypertension.
- The role of diet in human health is increasingly being researched as a factor that could contribute to human health. The human diet can have a pro-inflammatory effect and can influence the immune system by different mechanisms including altering the glycome in a way to produce more pro-inflammatory antibodies. In addition, depending on the genetic predisposition of an individual, diet can play a role in the development of various FrHCs and NCDs. Also, diet has been shown to be associated with the dense and complex population of microorganisms that colonise the human gastrointestinal tract. Yet, despite current knowledge about the glycome, the susceptibility to different dietary regimes for FrHCs and NCDs requires additional interdisciplinary research, while nutrition, human gut microbiome and glycome research are still mostly compartmentalised.
- Common dietary patterns, characterised by high sugar and red meat consumption, as well as overly processed food with a lot of additives, have been investigated as influential factors on human health, including through an increased risk of developing FrHCs and NCDs.

Background and scope



- This Challenge will only fund multi-disciplinary research proposals that include at least nutritional, microbiome and glycan research aspects. The research focus can be on one or more of the Challenge specific objectives.
- Proposals are expected to investigate the interactions among nutrition, human gut microbiome and glycans beyond the state-of-the-art, to better clarify the role of diet into human health, including for example the interactions of whole plant foods, highly processed food and fermented foods with the human gut microbiome and glycans.
- Since the response of the human gut microbiota to diet is highly individual, we encourage the
 integration of observational studies, randomised controlled trials, and mechanistic studies in animal
 models with a machine learning approach that can be applied to a large number of participants and
 large data sets from already available studies.
- The need to ensure the long-term sustainability of current food production amid concerns for global food security, reinforces the idea that additional food sources should be considered and human det recommendations revised and adjusted to specific needs. A diet based on more plant-based food is certainly a very promising option which provides dietary fibres and a large array of phytochemicals.
- Proposals are expected to consider regulatory aspects and to build on the work carried out so far by the European Food and Safety Authority (EFSA).



PRECISION NUTRITION

- Goal: The goal of this Challenge is to investigate the role of diet in obesity and NCDs, to provide scientific evidence for alleviating the consequences of obesity and NCDs on health and wellbeing and to pave the way towards the design of novel foods, tailored to individual dietary needs
- Allocated budget: 32,7 M



Overall goal and specific objectives of the Challenge

- The goal of this Challenge is to investigate and provide scientific evidence of the role of diet in FrHCs and NCDs.
- The specific objectives of this Challenge are:
 - Investigate causal relationships among diet, microbiome and glycans, with potential impact on personalising human diet.
 - Identify food ingredients, food technology processes, additives and dietary patterns that have negative effects on human health and, aging.
 - Identify food ingredients, food technology processes and additives that have a beneficial effect on human health, and aging.
 - Develop recommendations for the reformulation of new food products and processes with no- or fewer additives



Understanding and establishing relationships between diet and the pathology of Food-related Health Conditions and Noncommunicable Chronic Diseases would enable the prevention and alleviation of the consequences of FrHCs and NCDs on health and well-being through changes in diet. This is foreseen through the evidence-based upgrade of the current dietary guidelines.

In the long run, it is expected that project results will be the basis for the development of novel foods and processes which might decrease the incidence of FrHCs and NCDs among the general population, and a better quality of life for the individuals affected by these

Evaluation up to this point



- Is based on:
- Excellence
- Implementation
- Impact



How does the EIC decide if your proposal will be funded?





Pathfinder Challenge Guides



- Challenge Guides provide more information about:
 - **Portfolio considerations** used for the final selection of proposals to be funded

• Challenge Guides are published on <u>EIC Pathfinder (europa.eu)</u>



For this Challenge, the portfolio-building process will be based on the preliminary mapping by the committee of the proposals to one (or both) of the following categories:

i) Food-related Health conditions such as but not limited to obesity and malnutrition;

ii) Noncommunicable Chronic diseases such as but not limited to diabetes and hypertension.

The evaluation committee will aim to compose a balanced portfolio covering a wide range of Food-related Health conditions and Noncommunicable Chronic diseases.

Portfolio building approach: Portfolio categories

- Food-related Health Conditions (FrHCs) such as but not limited to:
- Obesity, malnutrition, eating disorders, food intolerances and allergies, acid reflux, irritable bowel, various mineral and vitamine deficiencies, high cholesterol.
- Noncommunacable Chronic Diseases (NCDs) such as but not limited to:
- diabetes, hypertension, osteoarthritis, rheumatic arthritis, Parkinson's- and Alzheimer's disease, celiac disease.



Summary of portfolio building approach

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	Shared component/complementarity		
Category	Course of action	Technological approach	
 Food-related Health Conditions Noncommunicabl e Diseases-NCDs 	 Food ingredients Food technology processes Food additives 	 Methodology applied Omics analysis. 	

Portfolio building approach: Shared component/complementarity

European Innovation Council



Food ingredients such as but not limited to omega-3 fatty acids, antioxidants, enzymes, phytochemicals, probiotics, prebiotics. Food technology processes include physical, chemical and biological processes under various parameters separately or combined such as but not limited to fermenting, extracting, concentrating, extruding.

Food additives

• Check the EFSA page for list of permitted food additives. https://www.efsa.europa.eu/en/glossary/e-number

Technological approach

Methodology applied

Since the response of the human gut microbiota to diet is highly individual, we encourage the integration of observational studies, randomised controlled trials, and mechanistic studies in animal models with a machine learning approach that can be applied to a large number of participants and large data sets from already available studies.

Omics analysis such as but not limited to microbiomics, genomics, epigenomics, proteomics, metabolomics.

Challenge guide – Activities within a portfolio



• In your proposal add a dedicated WP for portfolio activities with at least **10 person months**

Suggested activities:

- Contributing to improve the current regulatory framework
- Effectively communicate of any key outcome of the research work of the portfolio members collectively and/or an individual project, to early stage private and corporate investors focused on the same field. Such communication might also be addressed to the general public to increase social acceptance for proposed solutions, or to other researchers and stakeholders through common dissemination activities at scientific conferences or trade-fairs.
- Market analysis: Map the targeted players in a market and exchange the market research analysis results with other the portfolio projects to identify specific players with which the entire portfolio can establish partnership(s) of much higher impact as opposed to that of the individual project.
- Discussions on IP, licensing and business models and commercialisation strategy
- Providing access to Open Innovation Test Beds and other research infrastructure or clinical trials
- Standardisation activities
- Providing access to new markets through multipliers like EEN





- After selection
 - Grant negotiations
 - Refine WP on portfolio activities
- After kick-off meeting
 - Portfolio meetings and implementation of portfolio activities



Why we really need EIC Programmes?



11 reasons why we really need EIC?

- 1. State of the art evaluation
- 2. Grant
- 3. Booster grants for Pathfinder, T2M for Transition projects, BAS -Business Acceleration Support grants for Accelerator projects
- 4. Equity financing
- 5. Guidance & support by PMs
- 6. Visibility, promotion & networking
- 7. Increased credibility with possible investors
- 8. EIC support to women innovators
- 9. Possibility to improve the application (in next cut-off date)
- 10. Seal of excellence
- 11. Fast track procedure









Additional sources

- WP 2023 EIC 2023 work programme (europa.eu)
 - Challenge guides
- WP2023 General Info Day <u>European Innovation Council online Info Day Work</u> <u>Programme 2023 - 13 December 2022 (europa.eu)</u>
- EIC challenges information days EIC Challenges information days (europa.eu)



Q&A, Discussion





Join at **Sli.do**

With the event code **#Challenges**

Innovation made in Europe

Thank you

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