



PIVOTAL ASSESSMENT OF THE EFFECTS OF BIOACTIVES ON HEALTH AND WELLBEING. FROM HUMAN GENOMA TO FOOD INDUSTRY.

The **general objective** of PATHWAY-27 addresses the exploitation of bioactive compounds as ingredients of foods that, within the common diet, could significantly benefit human health and wellbeing. PATHWAY-27 uses three model compounds (docosahexaenoic acid - DHA, beta-glucan -BG, and anthocyanins -AC) and three model food matrices (bakery, dairy and egg products) to derive conclusions that will be widely applicable.

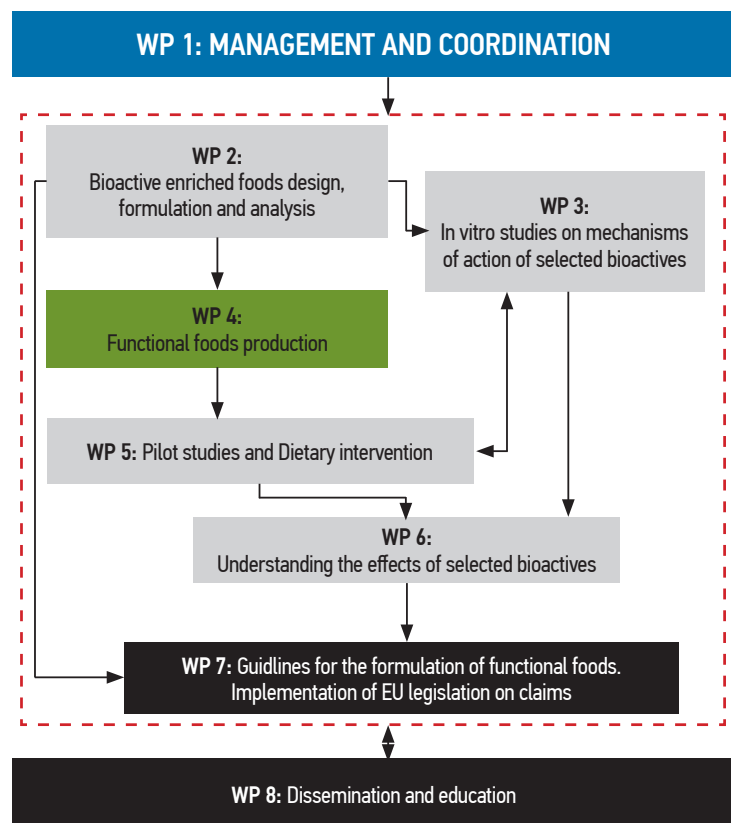
The **scientific objective** of PATHWAY-27 is the better understanding of the potential benefits and mechanism of action of the selected bioactive compounds (DHA, BG and AC), considered as ingredients of the PATHWAY-27 BEF, in the prevention of the Metabolic Syndrome (MS).

The **technological objective** of PATHWAY-27 is the development of improved food formulations leading to the production of bioactive-enriched foods (BEF) having a scientifically demonstrated impact on health.

Expected results:

- Increased knowledge on availability, activity, synergism and mechanisms of action of bioactive compounds when administered as integral parts of foods, not as supplements.
- Guidelines and best practice for undertaking intervention studies as well developing and validating innovative biomarkers that are relevant to humans.
- The possibility of improving the formulation of new BEF having a scientifically-validated positive effect on human health and wellbeing.
- Increase in the innovation potential and competitiveness of SMEs (small and medium-sized enterprises).
- Supporting the implementation of European legislation on health and nutrition claims.

PATHWAY WORKPACKAGES AND THEIR RELATIONSHIPS:



WORKPACKAGES (WP):

WP1: Management and coordination

WP2: Formulation and production of foods enriched with docosahexaenoic acid (DHA), beta-glucan (BG), anthocyanins (AC) alone and in mixtures. Bioactives are not considered as discrete molecules, but as ingredients of bioactive-enriched foods (BEF).

WP3: Understanding the mechanism of action of each bioactive compound (DHA, BG and AC) and their possible synergism through in vitro studies.

WP4: Extraction and purification of the selected bioactives from dietary sources, and their use for the production of BEF to be used in pilot and intervention studies.

WP5: Performing the pilot studies and the larger intervention studies which are essential to provide information on the effectiveness of the bioactive-enriched foods in the prevention of the MS.

WP6: Understanding in vivo by the use of 'omics' techniques the mechanisms underlying the effects related to the consumption of the PATHWAY-27 BEF, and selection of new biomarkers.

WP7: Preparation, publication and implementation of guidance documents that will inform and assist the food industry sector, especially SMEs, to produce BEF with supportive health claims according to the EU legislation.

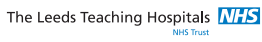
WP8: Dissemination and technology transfer



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PROJECT PARTNERS:

PATHWAY-27 includes 25 partners broadly distributed in Europe: west to east, south to north Europe, including one Candidate Country (Turkey). The EU Consortium consists of different organisation types, namely: Universities, Research Institutes and SMEs.

N°	NAME	COUNTRY
1.	Alma Mater Studiorum Università di Bologna (UNIBO) – PROJECT COORDINATOR	Italy
2.	Institut National de la Recherche Agronomique (INRA)	France
3.	Karolinska Institutet (KI)	Sweden
4.	Max Rubner-Institut (MRI)	Germany
5.	VTT Technical Research Centre of Finland (VTT)	Finland
6.	Deutsches Krebsforschungszentrum (DKZF)	Germany
7.	University of Leeds (ULE)	United Kingdom
8.	University of Southern Denmark (SDU)	Denmark
9.	Asociación de Investigación de la Industria Agroalimentaria (AINIA)	Spain
10.	Centre de Recherche en Nutrition Humaine Auvergne (CRNH)	France
11.	Leeds Teaching Hospital NHS (LTH)	United Kingdom
12.	Ege University (EGE)	Turkey
13.	Campden BRI Magyarország Nonprofit Korlátolt Felelősségű Társaság (CBHU)	Hungary
14.	International Life Sciences Institute Europe - aisbl (ILSI)	Belgium
15.	Lebensmittelversuchsanstalt (LVA)	Austria
16.	European Commission - Joint Research Centre–Institute for Health and Consumer Protection (JRC)	Italy
17.	International Food Network Ltd (IFN)	United Kingdom
18.	AdWare Research Fejlesztő és Tanácsadó Kft. (ADWR)	Hungary
19.	Giotto Biotech s.r.l. (GIO)	Italy
20.	NGB Genetics srl (NGB)	Italy
21.	Applications Santé des Lipides (ASL)	France
22.	Abro Biotec, S.L. (ABRO)	Spain
23.	Swedish Oat Fiber (SOF)	Sweden
24.	Adexgo Ipari Kereskedelmi és Szolgáltató Kft. (ADX)	Hungary
25.	Grupo Desarrollo (DPL)	Spain



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