

Partnering Opportunity

Profile status : Published

Research Development Request

HORIZON-CL6-2022-CIRCBIO-01-04: Spanish company is looking for partners to develop food, nutritional and health formulations with glucosinolates enriched crop by-products.

Summary

The Spanish company, which is a vegetable seed supplier, is preparing a project proposal as coordinator. The objective of the project is to use glucosinolates from enriched vegetables to develop value added products.

This company is searching for partners from several sectors to incorporate this plant derived glucosinolates in their formulations.

The project will be submitted to HORIZON-CL6-2022-CIRCBIO-01 call under Horizon Europe.

Creation Date	18 August 2021
Last Update	23 August 2021
Expiration Date	01 February 2022
Reference	RDES20210723001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/9b505313-0846-4502-b6aa-8f5182c65d32

Details

Description

Brassica crops (broccoli, cauliflower, cabbages, mustard, rapeseed, etc.) are sources of glucosinolates and their derivatives, the isothiocyanates. These plant-derived bioactive compounds are well-known for their antioxidant, antimicrobial, bactericide, and fungicide activity as well as by their possible protective effect towards cancer and

other diseases. Moreover, glucosinolates has been employed as ingredients for cosmetic formulations treating pigmentation abnormalities and as skin whitening agents.

The Spanish company breeds, produces and markets high quality vegetable seeds throughout Europe, Middle East, Russia and Africa. Its research, production and sales facilities are located in 22 countries. It offers over 900 varieties of broccoli, tomato, squash, watermelon, cabbage, cauliflower, pepper, melon, cucumber and oriental crops to name a few.

This company has a research line focusing on increasing bioactive compounds in its products. In collaboration with a Spanish research centre, they have developed a patented product and methodology that substantially increases the amount of glucosinolates in Brassica crops. This patent relates to a composition comprising methyl jasmonate and a polysiloxane polyether for increasing the content of glucosinolates in adult plants of the genus Brassica, for example, broccoli. By means of foliar application of the composition on adult plants having a developed cuticle, a significant increase is achieved in the concentrations of glucosinolates in the floret of the plants, without degrading the organoleptic properties thereof. This development will boost the exploitation of glucosinolates as active compounds in different products

The project objective is to create value from glucosinolates enriched crop by-products for their use in food and phytosanitary formulations. Glucosinolates can be incorporated in formulation of other sectors such as cosmetic and health, that is why the project will focus on ensuring the adequate involvement of the farming sector and other actors who would benefit from the application of this technology. The project is addressed to agro-social implications of the application of patent together with different techniques in the field, securing long-term supply of affordable and sustainable biomass for the European bioeconomy. The aim is to optimise diversification strategies for different European agricultural production models and sectors

These approaches align perfectly with the demands of the European Farm to Fork strategy which encourage the obtaining of phytosanitary products from biological origin with low or non-environmental impact.

This company is the coordinator of the project proposal and is preparing the proposal with a Spanish research centre. The company is looking for partners to complete the consortium. The partners searched must incorporate the plant-derived glucosinolates in their formulations.

The project will be submitted to HORIZON-CL6-2022-CIRCBIO-01-04 topic under Horizon Europe on 15th of February of 2022. The partnership sought is a research cooperation agreement.

The deadline for expressions of interest is 1st of February of 2022.

Advantages and innovations

Glucosinolates and their derivatives, the isothiocyanates, could have interesting applications as biocidal molecules for food conservation and preservation, as flavouring agents, and as functional and nutritional ingredients. It will improve the competitiveness of the products containing this compound.

Researches have highlighted the potential of glucosinolates in food conservation and preservation. Due to its antibacterial and antifungal properties, glucosinolates could be used as a food ingredient for the control of foodborne bacterial and fungal pathogens. Moreover, it could be also employed as a flavouring agent.

Previous studies have assessed the relationship between glucosinolates and isothiocyanates with cancer diseases. They suggest that functional foods containing glucosinolates as ingredients could play a role in promoting optimal health and protecting against several forms of cancer.

Additionally, glucosinolates have also been studied for their anti-inflammatory and osteoporosis properties as well as for the treatment of skin pigmentation anomalies.

Glucosinolates have also shown the potential to be used to modulate gastrointestinal microbiota to help in the management of being overweight and obese.

Glucosinolates extracts obtained from brassica roots decrease melanin synthesis in melanocytes and play a role in modulating the expression of genes involved in melanin distribution, so it has a good hypopigmented activity. Furthermore, sulforaphane, a derivate of glucosinolates, played a crucial role when inhibiting melanin production in human skin cells by regulating tyrosinase gene expression. So it could be an efficient skin-whitening agent.

Finally, glucosinolates and isothiocyanates in high amounts in brassica crops (broccoli, cabbage, mustard, rape, etc.) could be a solution for soil bio-fumigation due to their high efficiency levels and for pathogen control.

Stage of development

Proposal under development

Keywords

Technology

07001004	Crop Production
08001002	Food Additives/Ingredients/Functional Food
08001005	Food Technology

Market

07003002	Health food
09005	Agriculture, Forestry, Fishing, Animal Husbandry & Related Products

Network Contact

Issuing Partner

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Open for EOI: **Yes**

Client

Type and Size of Organisation Behind the Profile

Industry >500

Year Established

0

Already Engaged in Trans-National Cooperation

No

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

The company is currently setting up a European consortium to carry out an European research-funded collaborative project. With this purpose, it looks for companies related to the food, nutrition, health, cosmetics, and phytosanitary sectors willing to research the incorporation of plant-derived glucosinolates in their formulations as food, nutritional or functional ingredients through a sustainable and circular approach.

The partnership sought is a research cooperation agreement to apply to HORIZON-CL6-2022-CIRCBIO-01 call under Horizon Europe programme.

Type of Partnership Considered

Research cooperation agreement

Program - Call

Framework Program

Environment (including Climate Change)

Call title and identifier

HORIZON-CL6-2022-CIRCBIO-01

Coordinator required

No

Deadline for EOI

01 Feb 2022

Deadline of the Call

15 Feb 2022

Weblink to the call

[https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl6-2022-circbio-01-04;callCode=null;freeTextSearchKeyword=HORIZON-CL6-2022-CIRCBIO-01-04%20;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094501,](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl6-2022-circbio-01-04;callCode=null;freeTextSearchKeyword=HORIZON-CL6-2022-CIRCBIO-01-04%20;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094501)

Attachments
