

Bioactive peptides from sunflower seeds with antioxidant and anti-inflammatory activity: from in silico trials to animal model

Research undertaken by Cereal Docks in collaboration with the University of Padua, the CNR Institute of Neuroscience in Padua, the Veneto Institute of Molecular Medicine (VIMM, Padua), and the European Synchrotron in Grenoble, France, has led to the discovery of bioactive peptides derived from the **sunflower protein isolate** developed by Cereal Docks (Italian patent application number IT102022000016812). These peptides have demonstrated significant biological **antioxidant and anti-inflammatory activity** in various model systems, including zebrafish (*Danio rerio*)

Sunflower (*Helianthus annuus*) is a key component of Cereal Docks' supply chain, offering significant opportunities for the agricultural sector. More than just an excellent source of protein with a good amino acid profile, sunflower possesses interesting taste and organoleptic properties. Moreover, sunflower seeds are not listed among the fourteen main food allergens identified by European Regulation 1169/2011.

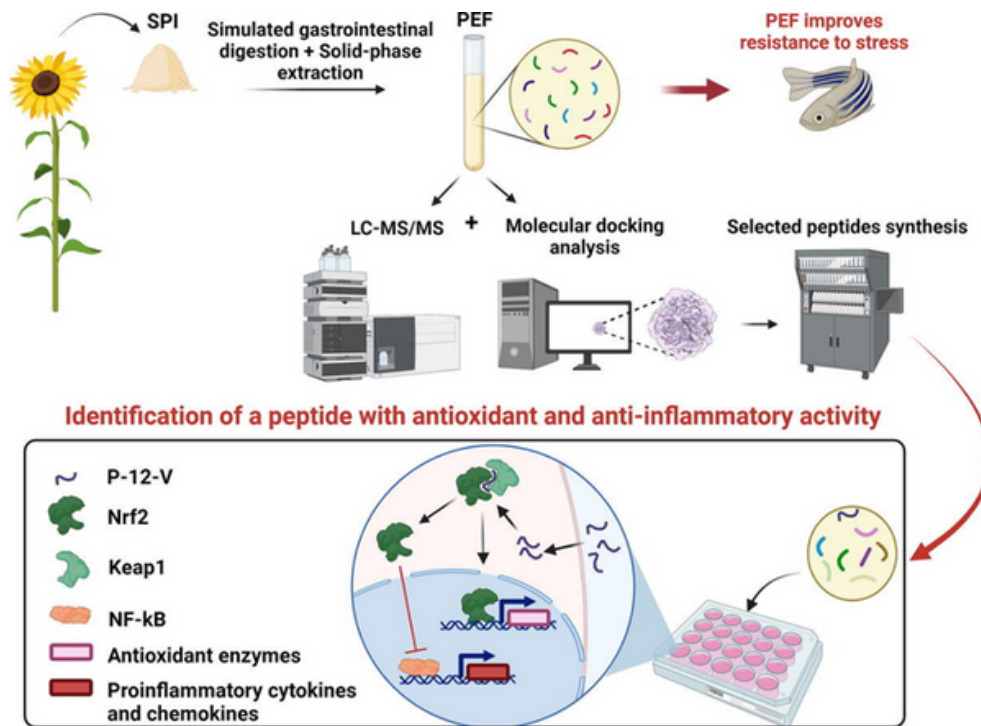
This oil crop, alongside soy and rapeseed, is widespread in Europe, particularly Eastern Europe, and North America. Its minimal water requirements and adaptability to various soil types make it particularly **suitable for current and future climatic challenges**. Additionally, it contributes to enhanced **biodiversity in the fields** due to its attractiveness to various pollinating insects, especially bees (*Apis mellifera*).



Cereal Docks has pioneered a **new protein extraction process from sunflower seeds**, resulting in an innovative protein isolate. This isolate stands out not just for its source—the sunflower seed—but also for its excellent nutritional and taste profile. Its **versatility** opens up a **wide array of applications**, including enriching baked goods, gluten-free products, mayonnaises, sauces, dressings, vegetable drinks, ice cream, spreads, cheeses, burgers, vegetable bread, and even meat-like preparations.

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The **full scientific article** is published by the journal **Food Chemistry**.



The public grant titled '**The agriculture of the future and functional foods: a challenge for research and the revitalization of the Veneto region**' brought together partners from the innovative regional networks Innosap and **Ribes-Nest** of which Cereal Docks is a member. The main objectives of this initiative were to identify and characterize new active ingredients in plant-origin raw materials to enhance primary production, with a specific focus on exploring their biological activity and immune response.

