

# Obtaining concentrate of Cynarine and Cynaropicrin from artichoke by-products for nutraceutical commercial use

**Main researcher:** Ana Pastor de Abram

**Co-researcher:** Dr. Juan Carlos Cedrón

**Research assistants:** Nino Castro Mandujano, Graciela Zegarra and Martín Cruzado

**Funded by:** Research and Development Fund for Competitiveness (FIDECOM). IDB Fund.

**Involved institutions:** Cía. Danper Trujillo SAC and PUCP.

Department of Science - Chemistry Section

---

Functional food is defined as processed food that contains ingredients that offer health benefits or desirable physiological effects beyond those provided by basic nutrition. In 2008, the market for this type of food represents sales for about US\$ 80.000 million.

In this context, this research work seeks to produce functional food from artichokes, plant of the *Cynara* genus widely distributed throughout the world and ancestrally known for its food value and medicinal properties. It also contains various metabolites: Cynarine (1,3-di-O-caffeoylquinic), Cynaropicrin, Luteolin, Chlorogenic acid, Caffeic acid, etc.

Due to the presence of these metabolites, artichoke extract has important properties, such as antioxidant, antimicrobial, hepatoprotective, anti-fungal and anticholeretic agent. It is important to emphasize that one of the compounds structurally related to Cynarine also possesses the anti-HIV property. The artichoke is a major generator of foreign exchange product in La Libertad region, since the climate in this area is ideal for its cultivation. However, during its processing, bottoms and hearts are exclusively used, and around 70% of the plant -leaves and debris- is waste.

The innovation of this project is based on the use of the artichoke remnants (fibrous bracts and peduncle) as raw material for the development of new products and by-products of high added value. Currently, the obtaining process of Cynarine and Cynaropicrin is being developed at PUCP, which is intended to be a pilot project in coordination with one company. Therefore, this research work strengthens the links between the university and the industry.