

**THE EXTRACTION PROCESS AND USES OF POLYPHENOLIC COMPOUNDS FROM THE PEEL OR SEED OF THE CACTUS FRUIT PRICKLY PEAR**

<i>Offering Organization:</i>	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C.
<i>Type of Organization:</i>	Public Research Center
<i>Development Stage:</i>	Laboratory
<i>Desired Relationship:</i>	<ul style="list-style-type: none"> <li>– Technological research and development financing (technological partner)</li> <li>– Specialized application tests</li> <li>– Creation of a new company (Joint Venture) for the commercialization of the products outlined herein</li> <li>– Licensing of patents</li> </ul>
<i>Sector:</i>	Food
<i>Area of knowledge:</i>	Food Technology
<i>Key words:</i>	Polyphenolics, prickly pear peel, prickly pear seed, polyphenols, biological properties

**DETAILED DESCRIPTION:**

*Problem to be solved:*

Humans in recent years have shown an increased interest in consuming certain foods, which not only provide nutritional value but also improve certain bodily functions. Presently, there is a renewed focus on including certain components in processed foods in order to supplement any deficiencies in the population. Plants can be used as sources of antioxidants to preserve nutritional value, which in turn prevents oxidative deterioration of lipids, and for other medicinal purposes. A large part of the antioxidant capacity of vegetables may be due to the presence of polyphenols which have extensive biological characteristics, specifically, free radical sequestering.

*Solution:*

Polyphenolic compound extracts obtained from the peel or seeds of prickly pear fall into the field of selective extraction of substances from plant materials, with biological functions applicable in the food, nutraceutical, cosmetic and pharmaceutical industries.

*New and Innovative Aspects:*

The research demonstrates that the extracts containing polyphenolic compounds obtained from the peel and seeds of the prickly pear have polyphenols with documented biological properties including antioxidant, anti-inflammatory, anticancer, antithrombotic, and those in the prevention of coronary heart disease.

**TECHNICAL CHARACTERISTICS:**

This invention relates to the process of obtaining a polyphenolic compound extract from the peel or seeds of different varieties of prickly pear of the *Opuntia* species. It has uses in cosmetics, foods, nutraceuticals and pharmaceuticals. The process described consists of the following stages:

1. Separation of the peel or seeds
2. Drying of the peel or seeds

3. Milling of the seeds or peel
4. Extraction of polyphenolic compounds
5. Evaporation of the solvent from the polyphenolic compound extract
6. Packaging the extract

*Main advantages derived from its utilization:*

- Polyphenols in vegetables and fruits can prevent degenerative diseases including cancer through antioxidants and/or modulation of various functions of proteins.
- Plants can be used as a source of antioxidants to preserve nutritional value, which in turn prevents oxidative deterioration of lipids, and for other medicinal purposes.
- Research demonstrates that extracts containing polyphenolic compounds obtained from the peel and seed of the prickly pear have polyphenols which have documented biological properties including antioxidant, anti-inflammatory, anticancer, antithrombotic, and those in the prevention of coronary heart disease.

*Applications:*

- Food, nutraceutical, cosmetic and pharmaceutical industries

**INTELLECTUAL PROPERTY**

- Patent granted in 2011, valid until 2027.

**ABOUT THE OFFERING ORGANIZATION**

<i>Presentation:</i>	El Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. (CIATEJ) is a public research center that belongs to the national technology development and innovation network, the National Council for Science and Technology (CONACyT). CIATEJ is focused on the agricultural, food, health, and environmental sectors with an emphasis on the application of innovative biotechnology.
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